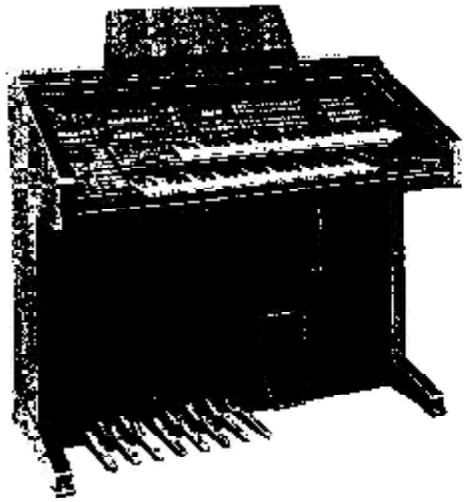
ORDER NO. EMID881221
A4

Service Manual

Electronic Organ

SX-GX7

(M), (MC), (EN), (EI), (EH), (EB), (EF), (EZ), (EW), (EP), (EK), (XL), (XR), (XS), (X)



AREAS

(M):	U.S.A.	(EP):	Spain
(MC):	Canada	(EK):	the United Kingdom
(EN):	Norway, Sweden, Denmark, Finland	(XL):	New Zealand
		(XR):	Australia
(EI):	Italy	(XS):	Malaysia, Singapore, South Africa
(EH):	Holland	(X):	the Middle East, Indonesia, Hong Kong, the Philippines, Taiwan
(EB):	Belgium		
(EF):	France, Austria		
(EZ):	Germany		
(EW):	Switzerland		

Specifications

KEYBOARD			UPPER MANUAL 49 KEYS, LOWER MANUAL 49 KEYS, PEDAL KEYBOARD 13 KEYS, FULL BASS PEDAL 32 KEY
DIGITAL DISK RECORDER			FSC, RECORD, EJECT BUTTON, ACCESS INDICATOR, 1—20 (UPPER KEYBOARD, MEDLEY ...MUSICAL DIRECTOR
ONE TOUCH PLAY			MARCH 1, 2, COUNTRY, DIXIE, SWING, BALLAD, JAZZ WALTZ, WALTZ, TANGO, RHUMBA, CHA CHA, GUARACHA, REGGAE, SALSA, SAMBA, BOSSA NOVA, 8 BEAT 1, 2, 16 BEAT 1, 2, SW ROCK, DISCO 1, 2, SHUFFLE, BAROQUE, ORCHESTRA, POLKA, GIGUE, VIENNESE, BIGBAND, COMBO, ROCK'N'R...MUSICAL DIRECTOR
PLAY SEQUENCER			BASS, LOWER, UPPER, SOLO, RECORD
VOICE SETTING COMPUTER			SET, 1 ~ 7, CANCEL
ORCHESTRAL CONDUCTOR			UPPER ...TAB, ORGAN, STRING ENSEMBLE, VOCAL ENSEMBLE, POLY, SPECIAL, SOLO LOWER...TAB, ORGAN, STRING ENSEMBLE, VOCAL ENSEMBLE, POLY, SPECIAL, SOLO
UPPER TONES	TAB & ORGAN	TAB	FLUTE 16', 8', 5-1/3', 4', 2-2/3', 2', 1', PERC 4', 2nd, TAB CANCEL, VOLUME
		ORGAN	ORGAN PRESETS 1—6, ORGAN PROGRAM 1—4 (PIPE ORGAN 1—4, ENT ORGAN 1—4, JAZZ & ROCK ORGAN 1—6...MUSICAL DIRECTOR)
	POLY		PIANO, ELECTRIC GRAND, ELECTRIC PIANO, HARPSICHORD, VIBRAPHONE, BANJO, GUITAR, JAZZ GUITAR, HAWAIIAN GUITAR, BRASS, OCTAVE BRASS (4 NOTES), FRENCH HORN, TENOR SAX, ACCORDION, BAGPIPE, SYNTH BRASS, SYNTH PERC 1, 2, VOLUME, HARMONIC CONTROL
	SPECIAL		PIANO, ELECTRIC PIANO, SPELL, DRUM, GLOCKEN, JAZZ GUITAR, HARP, SYNTH PERC, STRING ENSEMBLE, VOCAL ENSEMBLE, TRUMPET, FLÜGELHORN, ALTO SAX, CLARINET, SYNTH BRASS, VOLUME, HARMONIC CONTROL
			PROGRAM PITCH (VARIABLE, OCTAVE, NOTE, DETUNE...MUSICAL DIRECTOR)
	SOLO		VIOLIN, HARMONICA, WHISTLE, SOLO GUITAR, SYNTH LEAD 1, 2, 3, TROMBONE, TRUMPET, ALTO SAX, CLARINET, OBOE, FLUTE, PAN FLUTE, VOLUME, HARMONIC CONTROL
	STRING/VOCAL ENSEMBLE		16' /8', VOLUME
LOWER TONES	TAB & ORGAN	TAB	FLUTE 8', 4', 2-2/3', 2', 1', TAB CANCEL, VOLUME
		ORGAN	ORGAN PRESETS 1—4, ORGAN PROGRAM (PIPE ORGAN 1—4, ENT ORGAN 1—4, JAZZ & ROCK ORGAN 1—6...MUSICAL DIRECTOR)
	POLY		PIANO, ELECTRIC GRAND, ELECTRIC PIANO, HARPSICHORD, VIBRAPHONE, BANJO, GUITAR, JAZZ GUITAR, CLAVI, BRASS, OCTAVE BRASS (4 NOTES), FRENCH HORN, TENOR SAX, ACCORDION, SYNTH BRASS 1, 2, SYNTH PERC 1, 2, VOLUME, HARMONIC CONTROL
	SPECIAL		○ (U/L)
	SOLO		○ (U/L)
	STRING/VOCAL ENSEMBLE		8' /4', VOLUME
BASS TONES			ACOUSTIC, ELECTRIC, CHOPPER, SYNTH 1, 2, TIMPANI, BASS 16', 8', PIPE ORGAN 1, 2, STRING ENSEMBLE, TUBA, VOLUME, HARMONIC CONTROL
EFFECT	TREMOLO		UPPER TAB & ORGAN, LOWER TAB & ORGAN, TREMOLO SLOW/FAST (TREMOLO SPEED-BASS TREBLE...MUSICAL DIRECTOR)
	CHORUS		UPPER TAB & ORGAN, LOWER TAB & ORGAN, UPPER POLY, LOWER POLY, U & L SPECIAL, U & L SOLO
	CELESTE		UPPER TAB & ORGAN, LOWER TAB & ORGAN, UPPER POLY, LOWER POLY, U & L SPECIAL, U & L SOLO
SLOW ATTACK			UPPER, TAB, LOWER TAB
SUSTAIN			UPPER (CONTROL, OFF), U/L SPECIAL (CONTROL, OFF), LOWER (CONTROL, OFF), BASS (CONTROL, OFF)
DIGITAL REVERB			MODE (ROOM, HALL 1, 2, 3), DEPTH (CONTROL, OFF)
GLIDE			○ (FOOT SWITCH)
TECHNI-CHORD			○ (CLOSED, OPEN 1, 2, DUET...MUSICAL DIRECTOR)
RHYTHM	SELECTORS		MARCH 1, 2, COUNTRY, DIXIE, SWING, BALLAD, JAZZ WALTZ, WALTZ, TANGO, RHUMBA, CHA CHA, GUARACHA, REGGAE, SALSA, SAMBA, BOSSA NOVA, 8 BEAT 1, 2, 16 BEAT 1, 2, SW ROCK, DISCO 1, 2, SHUFFLE...MUSICAL DIRECTOR
	CONTROLS		START/STOP, SYNCHRO & BREAK, BALANCE (DRUMS), TEMPO/PROGRAM, DRUMS (MELLOW, VARIATION)

Technics

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of Puerto Rico, Inc.
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Carolina, Puerto Rico 00630

BACK GROUND SOUND		THUNDER, WIND, BIRD, WAVES, BELLS, CANCEL, BALANCE
KEYBOARD PERCUSSION		LOWER KEYBOARD...36 KEYS
FILL IN & INTRO		1, 2, SOLO
ENDING		○ VARIATION
ACCOMPANY		RHYTHMIC, MELODIC, VARIATION, BALANCE
COMPOSER		1—6, RECORD*, (UPPER KEYBOARD) 1—16, PRESET PATTERN ①, ②, ③, CLEAR, BEAT, 2ND BAR, TRIPLET, ACCENT, SELECT, (LOWER KEYBOARD) KEYBOARD PERCUSSION
RHYTHM SEQUENCER		ON, RECORD*
PLAY MODE	PLAY MODE	FINGERED, MEMORY
	PROGRAM CHORD COMPUTER	PCC, RECORD*, (LOWER KEYBOARD)
TEMPO SET		SET, 1, 2, MANUAL, FINE, TEMPO/PROGRAM
BASS SOLO		ON
TRANSPOSE		UP (+D♭, +D, +E♭, +E, +F, +F#) DOWN (−B, −B♭, −A, −A♭, −G)
TUNING		TUNING (434~446 Hz), ORCH TUNING...MUSICAL DIRECTOR
MUSICAL DIRECTOR		RHYTHM, ONE TOUCH PLAY, SOUND PROGRAM, MIDI & CONTROL, 1—4, 8 SELECTORS
MUSICAL DISPLAY		○
PROGRAM FUNCTION SWITCH		FOOT SWITCH L, R, KNEE LEVER, FULL BASS PEDAL, RECORD*
MIDI		MIDI PROGRAM CHANGE MIDI PART (BASS, LOWER, UPPER, SOLO), OCTAVE, P CHANGE, EFFECT, SUSTAIN, FSC EN, SONG SELECT, MIDI CLK, START/STOP...MUSICAL DIRECTOR

TERMINALS (Below the lower keyboard)	PHONES.....use headphones with 16Ω impedance MIC.....input level 7.5mV, 10KΩ, MIC VOLUME LINE OUT ...output level 300mV, 600Ω 2CH output (L, R...Phono Jacks)
TERMINALS (On the rear panel)	AUX IN.....input level 500mV, 30KΩ L, R/R+L terminals LINE OUT ...output level 300mV, 600Ω 2CH output (L, R/R+L) 3CH output (3, 2, 1) SEPARATED LINE OUT...output level 500mV, 600Ω MAIN MIX ON/OFF, BASS, DRUMS (L, R/R+L), EXP/DIRECT MIDI.....IN, OUT, THRU
OTHERS	POWER SWITCH, MAIN VOLUME, EXPRESSION PEDAL, INITIAL KEY (UPPER KEYBOARD)
OUTPUT	200W
SPEAKERS	30cm (11-13/16") × 1, 20cm (7-7/8") × 3, HORN TWEETER × 2
POWER REQUIREMENT	320W 420VA (Canada) AC 120/220/240V 50/60Hz, AC 120V 60Hz−NORTH AMERICA AC 220V 50/60Hz−EUROPE (EXCEPT FOR ENGLAND)
DIMENSIONS (W × H × D)	118.2cm × 103.4cm × 60.1cm (46-17/32" × 40-23/32" × 23-21/32")
NET WEIGHT (WITHOUT BENCH)	86kg (189.6 lbs.)
OPERATING CONDITIONS (DIGITIAL DISK RECORDER)	TEMPERATURE: 10°~40°C (50°~104°F) HUMIDITY: 20%~80%
ACCESSORIES	DIGITAL MEMORY DISK...1

NOTES: (*) Common RECORD button is used for these buttons.
Underlined tones also have sound variations.

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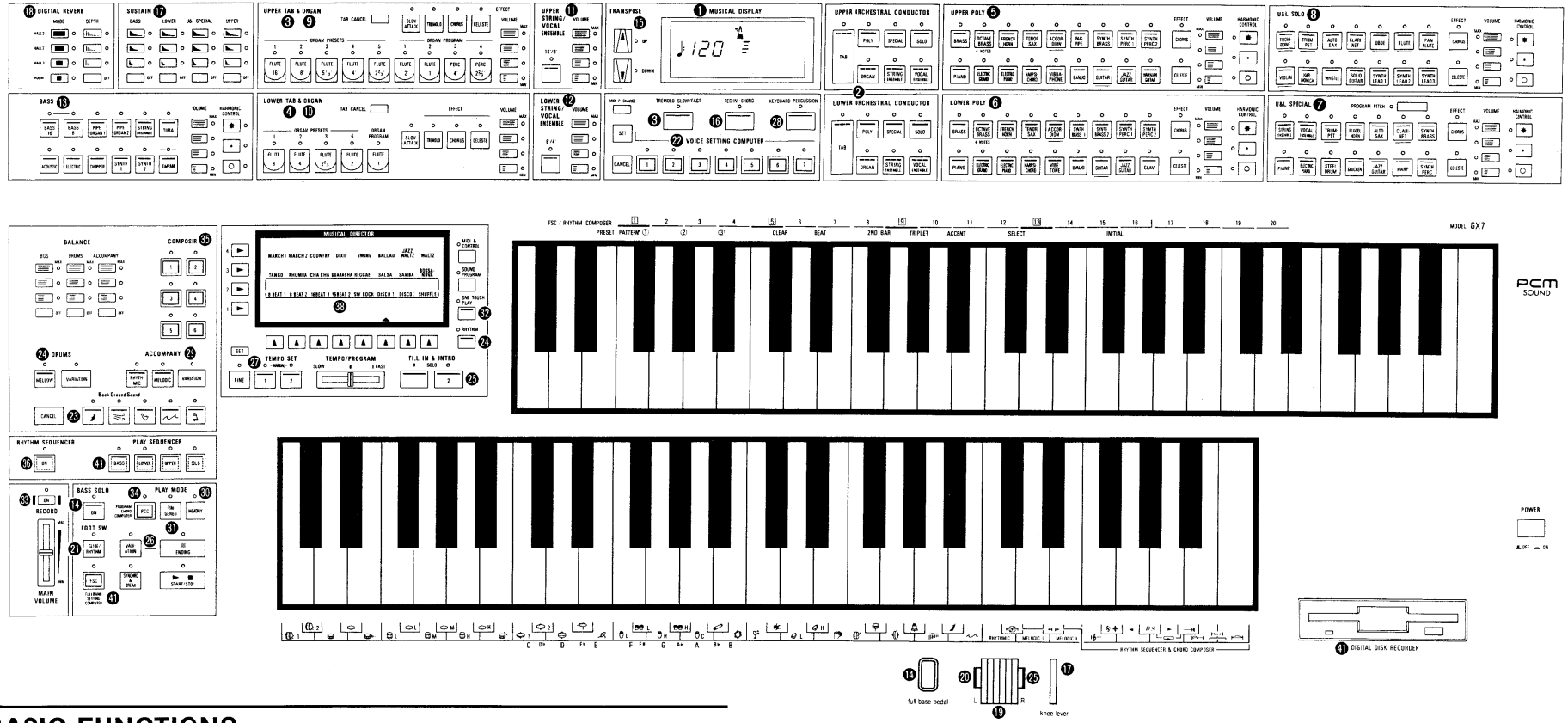
ARRANGEMENT OF CONTROL PANEL



BASIC FUNCTIONS

❶ MUSICAL DISPLAY
The rhythm tempo and beat are normally displayed. The display can also show the transposed chord or function as a stopwatch. If you use any of the various memories, their contents are displayed while you store or play back.

❷ ORCHESTRAL CONDUCTOR
These buttons allow you to select groups of voices and their effects instantly. The voice groups are selected independently for the upper and lower keyboards.

❸ UPPER TAB
These voices are selected for the upper keyboard by turning on the **TAB** button of the **UPPER ORCHESTRAL CONDUCTOR**. Included are the flute and percussive sounds, plus tremolo and celeste effects. A **TAB CANCEL** button allows you to turn off all the **TAB** voices immediately.

❹ LOWER TAB
Select these voices for the lower keyboard by turning on the **TAB** button of the **LOWER ORCHESTRAL CONDUCTOR**. Like the **UPPER TAB** buttons, the voices can be combined or selected individually.

❺ UPPER POLY
Turning on the **POLY** button of the **UPPER ORCHESTRAL CONDUCTOR** will select these sounds for the upper keyboard. They include the sounds of orchestral and percussive instruments.

❻ LOWER POLY
Select these voices for the lower keyboard by turning on the **POLY** button of the **LOWER ORCHESTRAL CONDUCTOR**. As with other lower keyboard voices, they are used mostly for accompaniment.

❼ U&L SPECIAL
These voices can be selected for either the upper or lower keyboard by turning on the **SPECIAL** button in the **UPPER** or **LOWER ORCHESTRAL CONDUCTOR**. They comprise both orchestral and percussive instruments.

❽ U&L SOLO
Select these monophonic sounds for either the upper or lower keyboard by turning on the **SOLO** button in the **UPPER** or **LOWER ORCHESTRAL CONDUCTOR**. Select only **SOLO** for a keyboard, or combine with other voices using the **ORCHESTRAL CONDUCTOR**.

⑨ UPPER ORGAN
These voices are selected for the upper keyboard when the **ORGAN** button of the **UPPER ORCHESTRAL CONDUCTOR** is on. Five preset organ voices are always available, and in addition, four more preset sounds can be selected from the **MUSICAL DIRECTOR** and stored for instant recall.

⑩ LOWER ORGAN
Select these voices for the lower keyboard by turning on the **ORGAN** button of the **LOWER ORCHESTRAL CONDUCTOR**. Four preset organ voices are always available. For the GX5/GX7, an additional preset sound can be selected from the **MUSICAL DIRECTOR** and stored for quick recall.

⑪ UPPER STRING/VOCAL ENSEMBLE
These voices are selected for the upper keyboard with the **STRING ENSEMBLE** or **VOCAL ENSEMBLE** button of the **UPPER ORCHESTRAL CONDUCTOR**. As the names imply, these buttons allow you to create the effects of an orchestral string or choral section.

⑫ LOWER STRING/VOCAL ENSEMBLE
Select these voices for the lower keyboard with the **STRING ENSEMBLE** or **VOCAL ENSEMBLE** button of the **LOWER ORCHESTRAL CONDUCTOR**.

⑬ BASS
These are the voices for the pedal keyboard. As with other sound groups, the volume of the pedal voices is adjusted with the separate **VOLUME** buttons.

⑭ Full Bass Pedal/BASS SOLO
While the full bass pedal is pressed, the lowest note played on the lower keyboard is selected and played as the bass note; but the voices and effects are those selected by the **BASS** voice section. If the full bass pedal is pressed with the **BASS SOLO** button on, only the bass solo is heard when you play the lower keyboard.

⑮ TRANSPOSE
C is the standard setting, but you can raise or lower the key of the entire organ with the two buttons. The transposed key is shown on the **MUSICAL DISPLAY**.

⑯ TECHNI-CHORD
Chord notes played on the lower keyboard are added to melody notes played on the upper keyboard. Choose from four harmonic styles.

⑰ SUSTAIN/Knee Lever
Sustain can be applied to the upper, lower and/or pedal keyboard to allow the sound to fade away gradually. Adjust the length of the sustain with the **SUSTAIN** buttons. Turn the sustain on and off quickly with the knee lever.

⑱ DIGITAL REVERB
Apply a reverberation effect to the organ sound, and select from three levels of echo depth.

⑲ Expression Pedal
Increase and decrease the loudness of all the organ voices as you play to add expression to the music.

⑳ Glide Control
Lower the pitch or the organ by one half-tone by pressing this control. This is used, for example, for the Hawaiian guitar effect and can be applied to many of the upper and lower keyboard voices.

㉑ FOOT SW for GLIDE/RHYTHM
The glide control can be used instead to conveniently turn the rhythm on and off by turning this button on.

㉒ VOICE SETTING COMPUTER
Set up the voices and effects for the upper, lower and pedal keyboards, and then store them in these 7 buttons for instant recall as you play.

㉓ BACK GROUND SOUND
Five unique background sounds add special life and interest to your performance. The volume is adjusted with the **BGS** buttons in the **BALANCE** section.

㉔ Rhythm
Select a preset rhythm from the **MUSICAL DIRECTOR**; turn the rhythm on/off with the **START/STOP** button or **SYNCHRO & BREAK** button; adjust the volume with the **DRUMS** buttons (**BALANCE**); set the tempo—a complete rhythm section.

㉕ FILL IN & INTRO
Add a drum introduction or a fill-in (break) at the touch of a button during your performance.

㉖ ENDING
When this button is pressed, an ending rhythm pattern will be played and then the rhythm will stop.

㉗ TEMPO SET
Store two of your favorite tempos in the buttons for instant recall while playing.

㉘ KEYBOARD PERCUSSION
Turning this button on transforms your lower keyboard into a whole band of percussive instruments and special sounds. The keys are picture-coded for quick and easy selection.

㉙ ACCOMPANY
This feature is used with the automatic rhythms and provides chords that are perfectly synchronized with the selected rhythm. Use the **ACCOMPANY** buttons (**BALANCE**) to adjust the volume.

㉚ PLAY MODE
Select the type of accompaniment—either normal or automatic—or choose the accompaniment you programmed beforehand in the **PROGRAM CHORD COMPUTER**.

㉛ Auto Play Chord
This feature is selected when the **FINGERED** button in the **PLAY MODE** is turned on. When a single key on the lower keyboard is pressed, a full chord and a bass note sound. Play major, minor, seventh or minor seventh chords and the bass note just by pressing one key.

㉜ ONE TOUCH PLAY
With this special **MUSICAL DIRECTOR** feature, you select a rhythm or type of music, and appropriate voices and effects are automatically set.

㉝ RECORD
This button is used to store the contents of the organ's various memories, including the **PLAY SEQUENCER, FULLBAND SETTING COMPUTER, COMPOSER, RHYTHM SEQUENCER** and **PROGRAM CHORD COMPUTER**, or to store your performance with the Digital Disk Recorder. It is also used when setting the functions of the programmable switches.

㉞ PROGRAM CHORD COMPUTER
Use this feature to store the chord accompaniment of an entire song in the organ, then have it played back automatically while you play the melody. With the keys at the right end of your lower keyboard, store whole, half- or quarter-measure chords, specify repeat play, and more.

㉟ COMPOSER
Three methods are available for you to create your own rhythm patterns using the lower keyboard **KEYBOARD PERCUSSION** sounds and the upper keyboard programming keys. Then recall the rhythms at the touch of a button while you play.

㊱ RHYTHM SEQUENCER
Store the rhythms for an entire tune, either preset rhythms from the **MUSICAL DIRECTOR** or ones you create yourself. Merely press the **RHYTHM SEQUENCER** buttor to have the entire rhythm sequence played back automatically.

㊲ Program Function Switches
The knee lever, left foot switch, right foot switch and full bass pedal can be programmed to conveniently turn on and off other functions, for example the rhythm start/stop or **TECHNI-CHORD**.

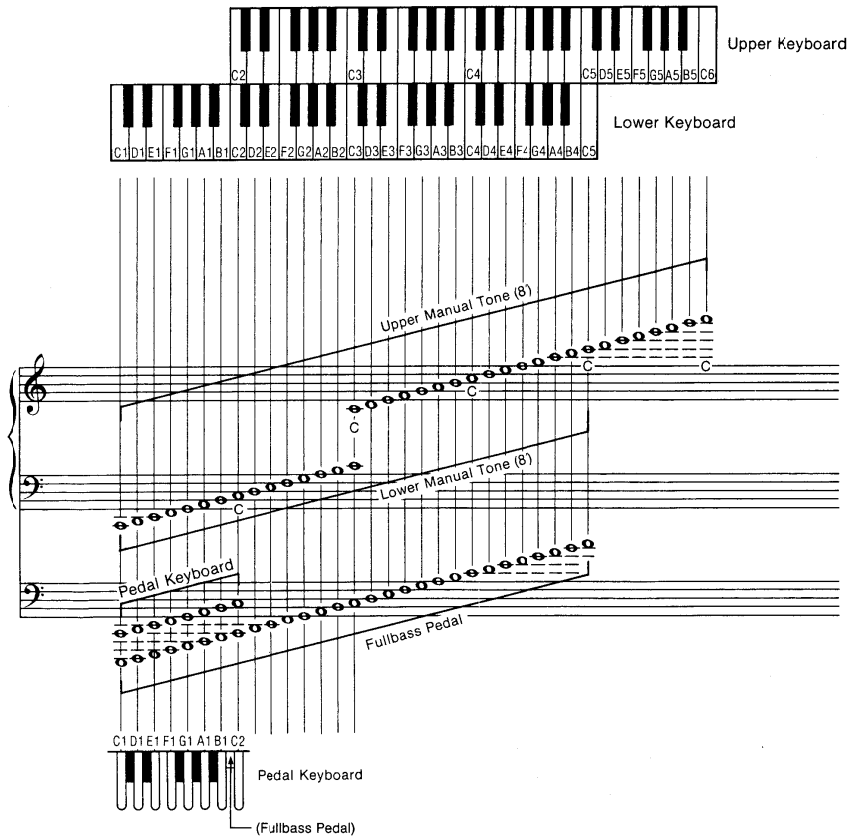
㊳ MUSICAL DIRECTOR
This multi-function matrix allows you to select a preset rhythm; use the **ONE TOUCH PLAY** feature; choose voice, rhythm and chord variations; adjust the tuning; set MIDI functions; and much more.

㊴ DIGITAL DISK RECORDER
The Digital Disk Recorder allows virtual unlimited storage and playback of your organ performances. Several tunes or one very long tune can be stored on each digital memory disk. Play and store the parts separately—bass, upper keyboard, lower keyboard and solo voices.
The sequence is then synchronized and played back automatically.

KEYBOARD RANGES

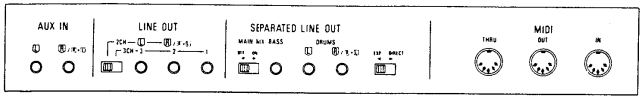
Upper Keyboard .....49 Keys (4 Octaves)
Lower Keyboard .....49 Keys (4 Octaves)
Pedal Keyboard .....13 Keys (1 Octave)+Fullbass Pedal

*An 8-foot compass is used for each keyboard.


Upper Keyboard
C2 C3 C4 C5 D5 E5 F5 G5 A5 B5 C6
Lower Keyboard
C1 D1 E1 F1 G1 A1 B1 C2 D2 E2 F2 G2 A2 B2 C3 D3 E3 F3 G3 A3 B3 C4 D4 E4 F4 G4 A4 B4 C5
Upper Manual Tone (8')
Lower Manual Tone (8')
Pedal Keyboard
Fullbass Pedal
C1 D1 E1 F1 G1 A1 B1 C2
Pedal Keyboard
(Fullbass Pedal)

CONNECTION TERMINALS

(On the rear panel)



■ AUX IN (input level 500mV, 30kΩ)

Use these inputs to connect the audio outputs of other audio equipment, such as a tape deck, VCR, tuner, or an audio mixer, for playback through the organ. If connecting a monaural line, connect it to the **R/R+L** terminal.

■ LINE OUT (output level 300mV, 600Ω)

Use these outputs to connect the audio output of the organ to other audio equipment, such as a tape deck, VCR, audio mixer, tone cabinets, or additional amplifier/speaker systems.
When the **MAIN MIX** switch is set to OFF, the **BASS** and **DRUMS** sections are disconnected from the **LINE OUT** terminals on the front and rear panel.

■ SEPARATED LINE OUT (output level 500mV, 600Ω)

Use these outputs to connect the audio outputs of the **BASS** and **DRUMS** sections only to other audio equipment. When the **MAIN MIX** switch is set to OFF, the **BASS** and **DRUMS** sections are disconnected from the **LINE OUT** terminals.

When not using the **SEPARATED LINE OUT** terminals, be sure the **MAIN MIX** selector is set to **ON**.

When the **EXP/DIRECT** selectors is set to **EXP**, the outputs from the **BASS** and **DRUMS** terminals respond to expression pedal changes; when set to **DIRECT**, these outputs do not change in response to changes in the expression pedal.

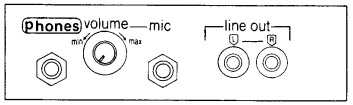
■ MIDI (Musical Instrument Digital Interface)

MIDI is standard specification that enables connection to equipment such as synthesizers and personal computers. Data transmission and reception are possible between the Technics organ and equipment provided with MIDI terminals.

IN: The terminal that receives data from external equipment.
OUT: The terminal that transmits data from the organ to external equipment.
THRU: The terminal that transfers data from the **IN** terminal directly to other equipment.

- Use a 5-pin DIN cord (less than 15m long) for these connections.
- When this organ is connected to other equipment in a loop (**IN** → **OUT**, **OUT** → **IN** connection), the organ may not operate properly. In this case, eliminate one of the connections.
- This organ can transmit or receive data for **UPPER**, **LOWER**, **BASS** and **SOLO** parts.

(Below the lower keyboard)



PHONES (Use headphones with 16 ohm impedance.)
For silent practice headphones may be used. When plugged in, the organ's speaker system is automatically switched off, and the entire organ is heard only through the headphones.

MIC (input level 7.5mV, 10kΩ)
The organ will accept a microphone of the uni-directional type. This type of microphone reduces feedback to the minimum.

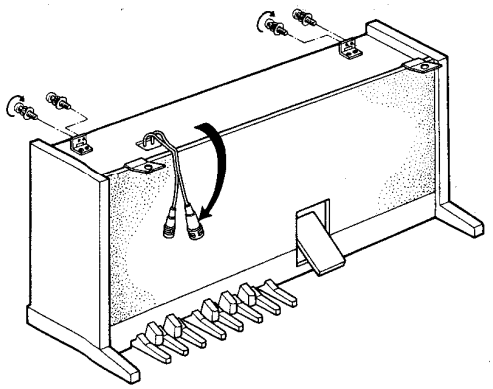
MIC VOLUME balances instrumental or vocal sounds fed into the microphone with the loudness of the organ.

LINE OUT (output level 300mV, 600Ω)
Phono jacks are provided for 2-channel (L/R) output. Use these outputs to connect the audio output of the organ to other audio equipment, such as a tape deck, VCR, audio mixer, tone cabinets, or additional amplifier/speaker systems.

When the **MAIN MIX** switch is set to OFF, the **BASS** and **DRUMS** sections are disconnected from the **LINE OUT** terminals on the front and rear panel.

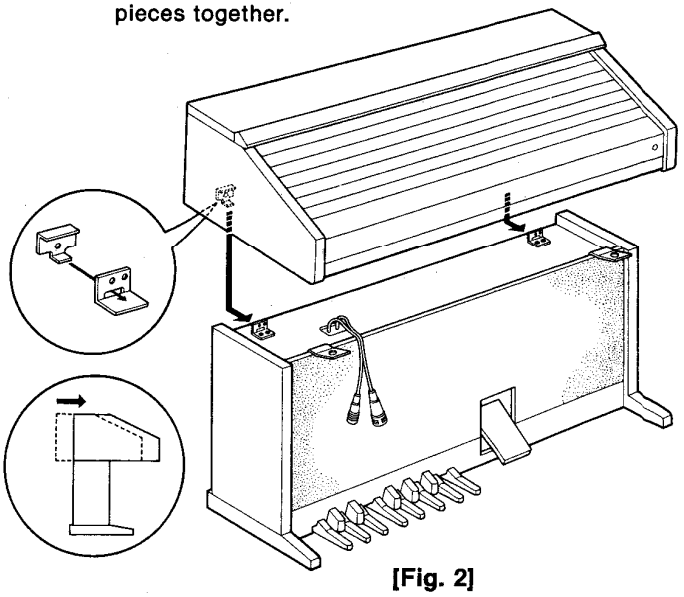
HOW TO ASSEMBLE THE ORGAN

1 On the lower stand part, remove the four bolts from the metal joints.
Lay the cords to the front of the stand.



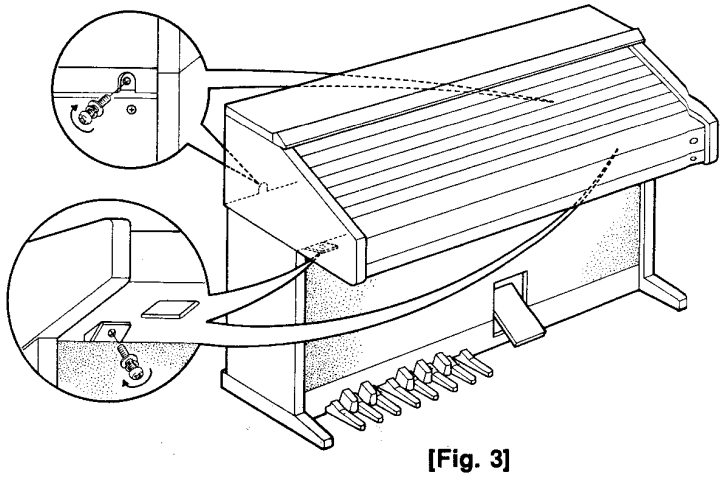
[Fig. 1]

2 Place the upper organ part on the lower stand part, making sure to fit the metal pieces together.



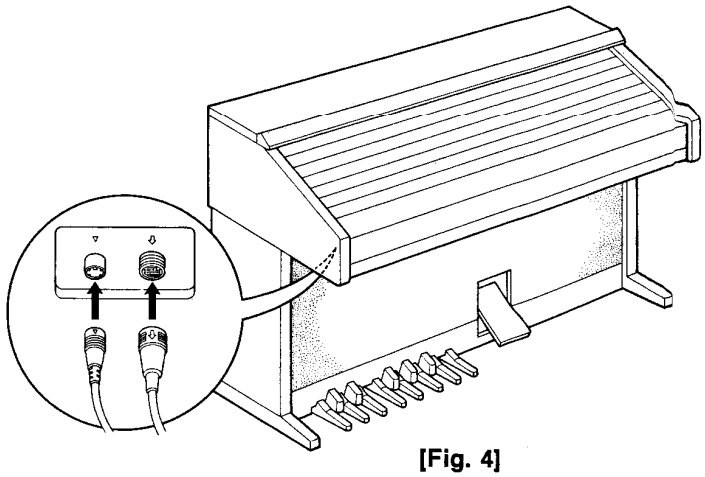
[Fig. 2]

3 Using the four bolts removed in step 1, secure the upper organ part to the lower organ part as shown in the figure.



[Fig. 3]

4 Connect the two cords from the lower stand part to the respective terminals on the underside of the upper organ part. Unlock the cover with the accessory key.



[Fig. 4]

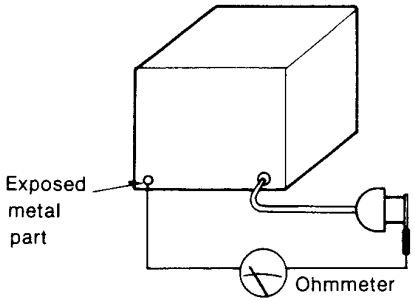
SAFETY PRECAUTION (This "safety precaution" is applied only in U.S.A.)

• Safety Precaution

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

• Insulation Resistance Test

1. Unpulg the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screw heads, connectors, control shafts, handle brackets, etc..
   Mesurements should range from 3MΩ to infinity to all exposed parts.



[Fig. 5]

Resistance=3MΩ to ∞

PRECAUTIONS BEFORE SERVICING

■ Precautions for measuring of the output waveforms.

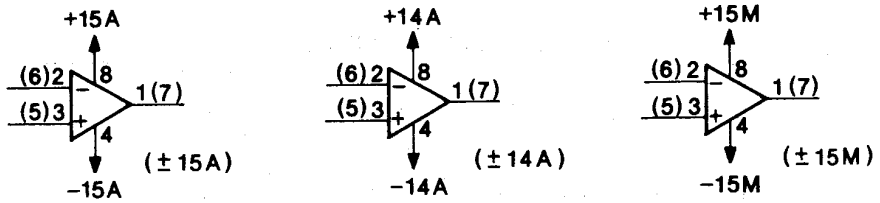
1. Please set the INITIAL mode before measurement.
   • INITIAL mode: Press the FSC button to turn it on, and then press the INITIAL key on the upper keyboard.
2. After INITIAL mode, set the measurement conditions as each check points.
3. The waveform was measured by "National Digital Storage Oscilloscope VP-5730A". Therefore the waveforms of musical tone signals shown may somewhat change due to variation of timing of measure.
4. The voltage shown in the photo is 1/10 of the actual value. However, the actual voltage is 10 times of as shown in this photo.

■ Important safety notice:

Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

■ Power supply of OP Amp IC

1. Power supply of EJ circuit is using three different type of voltage supply. Voltage supply to each OP Amp IC as shown the figure.



- (±15A): ±15V D.C. supply for analog circuit.
- (±14A): ±14V D.C. supply for modulation circuit.
- (±15M): ±15V D.C. muting power supply for noise suppression.

2. Other circuit of power supply (except EJ circuit) is only using ±15V (A).

■ Symbolic Marks

The symbolic marks for resistors and capacitors, which are used in the circuits for this organ, are as shown in TABLE-1 and TABLE-2.

1. RESISTORS
   - Resistors without symbolic mark are FIXED CARBON FILM RESISTORS (ERD-type).
   - All resistors are 1/4WATT, ±5% TOLERANCE unless otherwise designated in the schematic diagrams.

(TABLE-1)

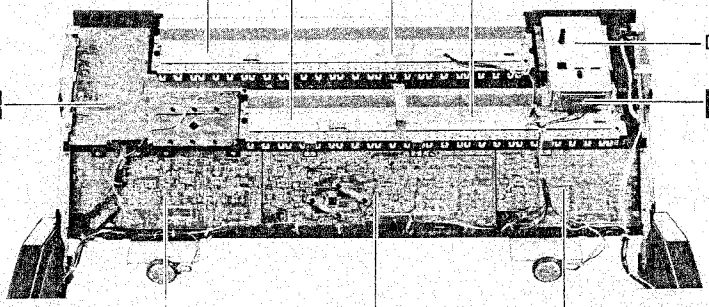
SYMBOL	SPECIFICATION	SYMBOL	SPECIFICATION
Ⓕ	Fixed Carbon Film Resistors "FLAME-PROOF" (ERD—F—type)	Ⓕ	Fixed Metal Film Resistors "FLAME-PROOF" (ERX—type)
Ⓕ	Fixed Wire Wound Resistors "FLAME-PROOF" (ERF—type)	[F]	Fuse Type Fixed Metal Oxide Film Resistors "FLAME-PROOF" (ERQ—type)
Ⓕ	Fixed Metal Oxide Film Resistors "FLAME-PROOF" (ERG—type)	[F]	Fuse Type Fixed Carbon Film Resistors "FLAME-PROOF" (ERD2FC—type)
	Fixed Metal Film Resistors (Precision and High Stability) (ERO—type)		

2. CAPACITORS
   - Capacitors without symbolic mark are POLYESTER CAPACITORS. (ECQM-type, ECQG-type, ±10% Tolerance)
   - Polarized capacitors without symbolic mark are Aluminum Electrolytic Capacitors. (ECEA—type, ±20% Tolerance)

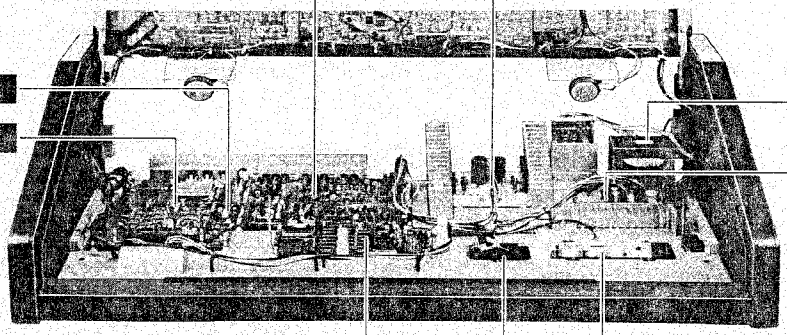
(TABLE-2)

SYMBOL	SPECIFICATION	TYPE
Ⓝ	Non-Polarised Electrolytic Capacitors	ECEA—N—type
Ⓨ	Non-Polarised Electrolytic (for Network System)	ECEA—Y—type
Ⓚ	Aluminum Electrolytic Capacitors (Miniature type)	ECEA—K—type ECEA—X—type
ⓂⓈ	Aluminum Electrolytic Capacitors (Low leakage current type)	ECEA—M—type
Ⓩ	Aluminum Electrolytic Capacitors (Low impeadance type)	ECEA—Z—type
ⓉⒻ	Metalized Plastic Film Capacitors (TF Series)	ECQV—type
ⓉⒻ	Polyester Film Capacitors	ECQB—type
○	Temprature Compensating Ceramic Capacitors	ECC—type
○	High-Dielectric Constant Ceramic Capacitors	ECK—type
	Metalized Polyester Film Capacitors for Across the Line	ECQ—EW—type
	Aluminum Electrolytic Capacitors for smooting Circuit	ECES—type

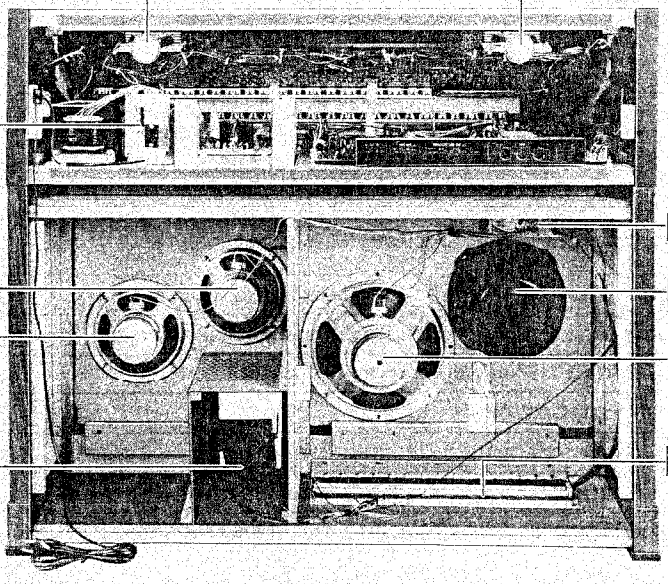
PARTS LOCATION


Manual Keyboard 3 P.C.B. MKB3
MKB1 Manual Keyboard 1 P.C.B.
Digital Disk Recorder
Lower Control Panel Left P.C.B. CPSL
FDCN FD Connector P.C.B.
Upper Control Panel Left P.C.B. CPL
CPR Upper Control Panel Right P.C.B.
CPC Upper Control Panel Center P.C.B.

[Photo-1]



[Photo-2]

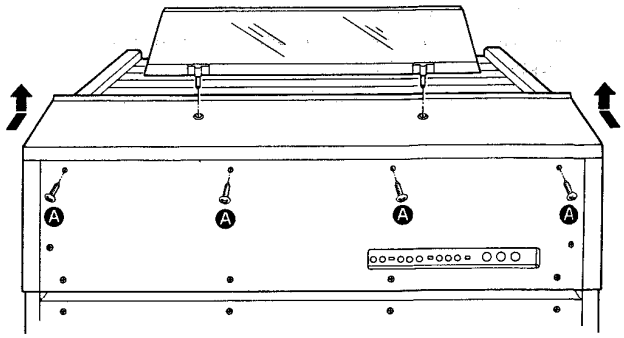


[Photo-3]

DISASSEMBLY INSTRUCTIONS

1. Top Cover

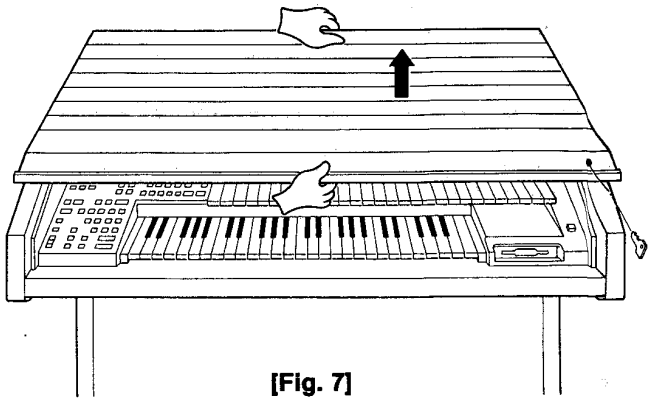
a) Remove the 4 screws Ⓐ located on the rear board.
b) Remove the top cover, slide it forward and lift.



[Fig. 6]

2. Sliding Cover

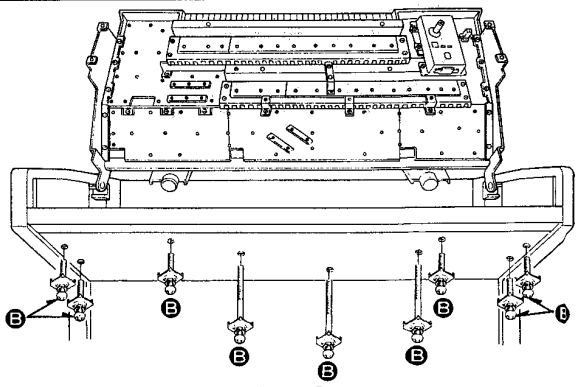
a) Remove the top cover according to step 1.
b) Unlock the sliding cover with the accessory key.
c) Remove the sliding cover in its fully closed position.



[Fig. 7]

3. Control Panel with Keyboard Unit

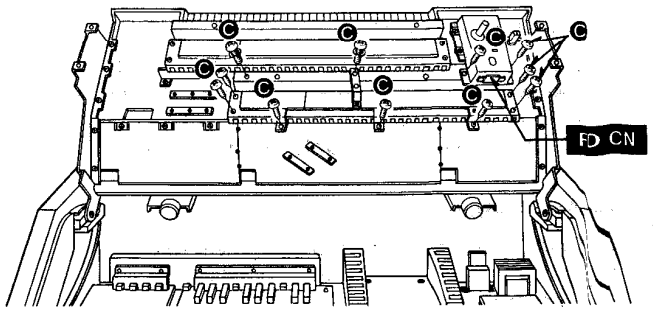
a) Remove both top cover and sliding cover according to steps 1 and 2.
b) Remove the 9 screws Ⓑ on the bottom of the shelf-board.
c) Then the control panel with keyboard unit can be opened upwards.



[Fig. 8]

4. Upper Keyboard

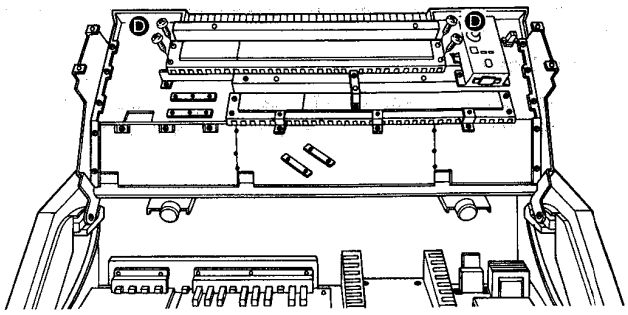
a) Open the control panel with keyboard unit according to step 3.
b) Remove the 11 screws Ⓒ which fasten the upper keyboard chassis.
c) Pull out the connectors from the manual keyboard P.C.B. and FD connector P.C.B.
d) Then the upper keyboard can be removed.



[Fig. 9]

5. Lower Keyboard

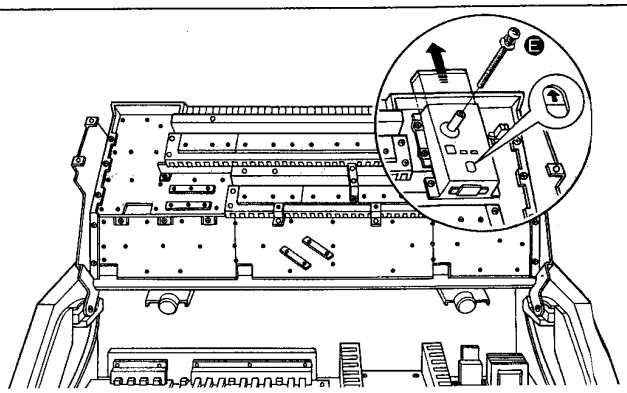
a) Open the control panel with keyboard unit according to step 3.
b) Remove the 4 screws Ⓓ which fasten the lower keyboard chassis.
c) Then the lower keyboard can be removed.



[Fig. 10]

6. Digital Disk Recorder

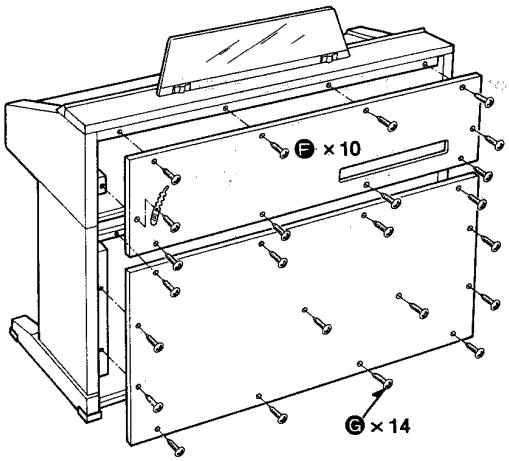
a) Open the control panel with keyboard unit according to step 3.
b) Remove the screw Ⓔ which fasten the digital disk recorder.
c) Pushing the digital disk recorder from the window of the DDR chassis.
d) Then the digital disk recorder can be removed from the front panel.



[Fig. 11]

7. Rear Board

a) Upper cabinet section
Remove the 10 screws Ⓕ on the rear board.
b) Lower cabinet section
Remove the 14 screws Ⓖ on the rear board.
Then the rear board can be removed.



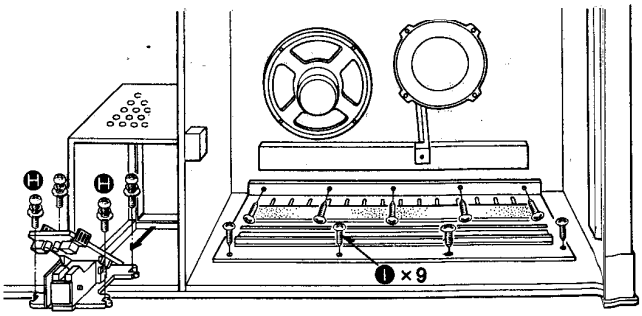
[Fig. 12]

8. Expression Pedal Unit

a) Remove the rear board of the lower cabinet.
b) Remove the 4 screws Ⓗ which fasten the expression pedal unit.
c) The expression pedal unit can be removed.

9. Pedal Keyboard

a) Remove the rear board of the lower cabinet.
b) Remove the 9 screws Ⓘ which fasten the pedal keyboard chassis.
c) Incline the cabinet toward the rear side, and remove the pedal keyboard from the bottom plate of the cabinet.



[Fig. 13]

MEASUREMENTS AND ADJUSTMENTS

■ Measuring Equipment

- Oscilloscope 20MHz, 10 : 1 probe
- Oscillator, 1kHz sine wave, 0~10Vp-p, 600Ω
- Capacitor, 50V 1μF (ECEA1HN010S)

ADJUSTMENT	MEASURING CONDITIONS	EQUIPMENT	ADJUSTMENT P.C.B.	ADJ. POINT	CONNECT METER TO	METER READING
BBD bias (Tremolo)	any position	Oscilloscope and oscillator	EJ P.C.B.	VR3	Check point ㉗	Photo-A

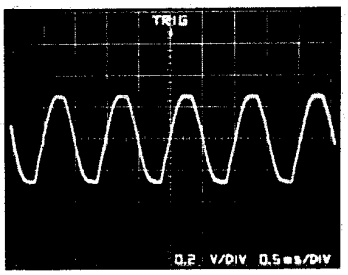
1. Connect the oscilloscope to check point ㉗ of EJ circuit board.
2. Input 1kHz sine wave to IC52-⑧ pin by oscillator through capacitor of less than 50V 1μF. Then, adjust the output level of oscillator until the sinewave on the oscilloscope is clipped.
3. Adjust VR3 so that the output waveforms on the oscilloscope are evenly clipped at top and bottom.

BBD bias (Celeste)	any position	Oscilloscope and Oscillator	EJ P.C.B.	VR2	IC40-① pin	Photo-A

1. Connect the oscilloscope to IC40-① pin of EJ circuit board.
2. Input 1kHz sine wave to IC34-⑧ pin by oscillator through capacitor of less than 50V 1μF. Then, adjust the output level of oscillator until the sinewave on the oscilloscope is clipped.
3. Adjust VR2 so that the output waveforms on the oscilloscope are evenly clipped at top and bottom.

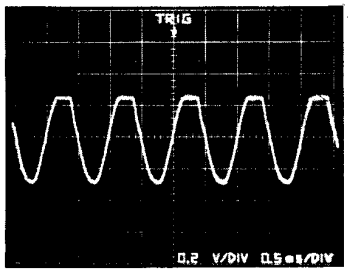
BBD bias adjustment

○: Good



[Photo-A]

×: Fault



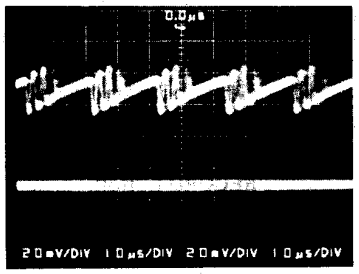
[Photo-B]

DRV bias	any position	Oscilloscope	DRV P.C.B.	VR2	Check point ②	Photo-C

1. Connect the oscilloscope to check point ② of DRV circuit board.
2. Adjust VR2 so that the output level on the oscilloscope are minimum level as shown in Photo-C.

Fault →

Good →



[Photo-C]

SYMPTOMS WHICH APPEAR TO BE SIGNS OF TROUBLE

The following changes in performance may occur in the Technics organ but do not indicate trouble:

Phenomenon	Remedy
A rhythm does not start or no rhythm sounds.	•No rhythm sounds if the **DRUMS BALANCE** buttons are off. •If the **PCC** button has no stored chords, no rhythm will start when turned on. •If the selected **COMPOSER** button has no stored rhythm patterns, no rhythm will sound. Select a **COMPOSER** button with a stored rhythm.
Rhythm **TEMPO/PROGRAM** control is inoperative.	When the **TEMPO SET** button is turned on: •The **TEMPO/PROGRAM** control does not operate if the **FINE** button is turned off. •If the **FINE** button is turned on, fine adjustment is possible with the **TEMPO/PROGRAM** control. Press **TEMPO SET** buttons **1** and **2** simultaneously to turn them off. This allows the rhythm tempo to be adjusted with the **TEMPO/PROGRAM** control.
The knee lever, foot switch(es) and full bass pedal (GX5/GX7) do not operate properly. For example, the knee lever does not turn the sustain function on and off.	Any functional on and off operation other than the factory presets are storable in these switches. For example, the knee lever can turn the **TECHNI-CHORD** on and off. Store your favorite functions to turn them on and off.
The **FAST TREMOLO** speed is improper.	The **FAST TREMOLO** speed is preadjustable. Adjust to your favorite speed. (Musical Director, MIDI & CONTROL Mode.)
The contents of the **PROGRAM CHORD COMPUTER**, **COMPOSER**, etc. cannot be stored.	After pressing the **RECORD** button, press the necessary buttons within 5 seconds. The **RECORD** button turns off after a lapse of 5 seconds, making storage operation impossible. Press the **RECORD** button again.
Storage is not possible with the **PROGRAM CHORD COMPUTER**.	•Check that the **PCC** indicator is slowly flashing. Pressing the **FINGERED** button turns off the **RECORD** button, making storage operation impossible. •Do not release the left hand (chord designation) before pressing the measure keys (, and).
When the rhythm stored in the **COMPOSER** is played, the **ACCOMPANY** and automatic bass accompaniment do not sound.	•Store patterns using the **RHYTHMIC** and **MELODIC** keys, just as you would with other rhythmic instrumental effects. •The bass of the Auto Play Chord sounds with a bass drum, which should be stored.
A rhythm pattern cannot be stored in the **COMPOSER** with the real-time mode.	The real-time metronome must be turned on to enable storage of a rhythm in the real-time mode. If the metronome cannot be heard, press the **START/STOP** button to start it.
The Digital Disk Recorder produces a noise during storage or automatic performance.	This occurs when the Digital Disk Recorder searches for a storage location. It does not indicate a problem.
The rhythm and melody do not coincide during automatic performance when using the Digital Disk Recorder.	This occurs when the automatic performance is started before the selected number appears on the **MUSICAL DISPLAY** after the **FSC** button has been pressed and the song has been selected by pressing a white numbered key on the upper keyboard. Be sure to wait for the selected number to appear.
The stored introduction is not reproduced during automatic performance.	•Set the beginning of a song, such as an introduction, before turning on the **RECORD** button. •To add an introduction after the **RECORD** indicator and **PLAY SEQUENCER** indicator flash, set it after turning on the **FSC** button. Then turn off the **FSC** button.

Phenomenon	Remedy
No storage is possible even when the **RECORD** indicator and **PLAY SEQUENCER** indicator are slowly flashing.	•No storage is possible when the **FSC** button is turned on. Turn it off before playing. •If any **PLAY SEQUENCER** indicator is lit, press the **START/STOP** button for automatic performance of the stored part. Another part can then be stored.
The quick rhythm tempo is delayed when the **PLAY SEQUENCER** is used.	This occurs when too many notes are played at one time. Slow down the tempo (to about ♩=250) or reduce the number of notes played at a time.
Different voices and effects are stored in the **FULLBAND SETTING COMPUTER** (**FSC**) or in the Digital Disk Recorder.	If the **VOICE SETTING COMPUTER** function is selected, the stored contents in this button are stored in the **FULLBAND SETTING COMPUTER** or in the Digital Disk Recorder. When the voices and effects selected by the **VOICE SETTING COMPUTER** are changed, store them in the **VOICE SETTING COMPUTER** again before storage in the **FULLBAND SETTING COMPUTER** or in the Digital Disk Recorder.
The cabinet and slide cover become heated to some degree.	The Technics organ has a built-in power source that heats the cabinet and slide cover to some degree. This is not an indication of trouble.
The buttons, keyboards, etc. malfunction.	•Press the **FSC** button first to turn it on and then press the **INITIAL** key on the upper keyboard. •If the buttons, keyboards, etc. do not return to normal, turn the **POWER** switch off once, then turn on again.

ERROR DISPLAY

When using the Digital Disk Recorder or the organ's internal memory (GX3/GX5) and an error (Err) is indicated on the **MUSICAL DISPLAY**, the number following indicates the type of error.

Error No.	Problem	Cause
Nothing appears on the display.	The memory disk format is different (when recording).	The disk used is not a normal mode or professional mode disk. Initialize the disk.
1	The mode change function of the Digital Disk Recorder does not work (when **RECORD** → **FSC** → **INITIAL** is pressed).	•No memory disk is inserted. •The memory disk is write-protected.
2	Data transmission error when loading from or saving on a memory disk.	An error occurred during data transmission with the memory disk. Perform the loading or saving procedure once again.
3	Recording in or playing back from the organ's internal memory is unsuccessful (GX3/GX5).	The memory track number specified is not correct. Specify **1**~**5**.
5	Loading or saving on a memory disk is unsuccessful.	•The memory track number is not correct. In the professional mode, specify **1**; in the normal mode, specify **1**~**20**. •No memory disk is inserted. •The memory disk is write-protected (when recording).

When the memory disk is not correctly inserted, an error will be indicated. Remove the memory disk and insert it correctly.

MIDI Implementation Chart

Technics Organ
[SX-GX3/SX-GX5/SX-GX7]

(Transmitted)

Function...		upper	lower	bass	solo	Remarks
Basic **Channel**	Default	1~16	1~16	1~16	1~16	memorized
	Changed	1~16	1~16	1~16	1~16	
Mode	Default	3	3	3	3	
	Messages	×	×	×	×	
	Altered	——	——	——	——	
Note **Number**	True voice	12~127 ——	0~120 ——	0~108 ——	12~127 ——	Including the use of Octave Shift
Velocity	Note ON	×	×	×	×	
	Note OFF	× (9nH:V=0)	× (9nH:V=0)	× (9nH:V=0)	× (9nH:V=0)	
After **Touch**	Key's	×	×	×	×	
	Ch's	×	×	×	×	
Pitch Bender		×	×	×	×	
Control **Change**	64	*○ ×	*○ ×	×	×	sustain
	93	*○ ×	*○ ×	×	×	chorus (GX5/GX7)
	94	*○ ×	*○ ×	×	×	celeste
Prog **Change**	True #	*○ (0~11) × *○ (0~15) × *○ (0~17) ×	*○ (0~9) × *○ (0~15) × *○ (0~17) ×	*○ (0~7) × *○ (0~9) × *○ (0~11) ×	*○ (0~7) × *○ (0~11) × *○ (0~13) ×	(GX3) (GX5) (GX7)
System Exclusive		×				
System **Common**	Song Pos	×				
	Song Sel	*○ (0~19) ×				
	Tune	×				
System **Real Time**	Clock	○				
	Commands	*○ ×				start/stop
Aux	Local ON/OFF	×	×	×	×	
	All Notes OFF	○	○	○	○	
Messages	Active Sense	○				
	Reset	×				

Notes

*○ ×..... Whether or not the data for each of these items is transmitted can be set.

**Including the use of Full Bass Pedal (GX5/GX7).

Mode 1: OMNI ON, POLY **Mode 2:** OMNI ON, MONO ○ : Yes
Mode 3: OMNI OFF, POLY **Mode 4:** OMNI OFF, MONO × : No

MIDI Implementation Chart

Technics Organ
[SX-GX3/SX-GX5/SX-GX7]

(Recognized)

Function...		upper	lower	bass	solo	Remarks
Basic **Channel**	Default	1~16	1~16	1~16	1~16	memorized
	Changed	1~16	1~16	1~16	1~16	
Mode	Default	3	3	3	3	OMNI OFF POLY Mode
	Messages	×	×	×	×	
	Altered	——	——	——	——	
Note **Number**	True voice	0~127 **36~127	0~127 **24~119	0~127 **24~119	0~127 **36~127	Changes depending on the position of the Transpose or Octave Shift
Velocity	Note ON	×	×	×	×	
	Note OFF	× (9nH:V=0)	× (9nH:V=0)	× (9nH:V=0)	× (9nH:V=0)	
After **Touch**	Key's	×	×	×	×	
	Ch's	×	×	×	×	
Pitch Bender		×	×	×	×	
Control **Change**	64	*○ ×	*○ ×	×	×	sustain
	93	*○ ×	*○ ×	×	×	chorus (GX5/GX7)
	94	*○ ×	*○ ×	×	×	celeste
Prog **Change**	True #	*○ (0~7) × *○ (0~7) × *○ (0~7) × 0~7 0~7 0~7	×	*○ (0~7) × *○ (0~9) × *○ (0~11) × 0~7 0~9 0~11	*○ (0~7) × *○ (0~11) × *○ (0~13) × 0~7 0~11 0~13	(GX3) (GX5) (GX7) (GX3) (GX5) (GX7)
System Exclusive		×				
System **Common**	Song Pos	×				
	Song Sel	*○ (0~19) ×				
	Tune	×				
System **Real Time**	Clock	○				
	Commands	*○ ×				
Aux	Local ON/OFF	×	×	×	×	
	All Notes OFF	○	○	○	○	(123~127)
Messages	Active Sense	○				
	Reset	×				

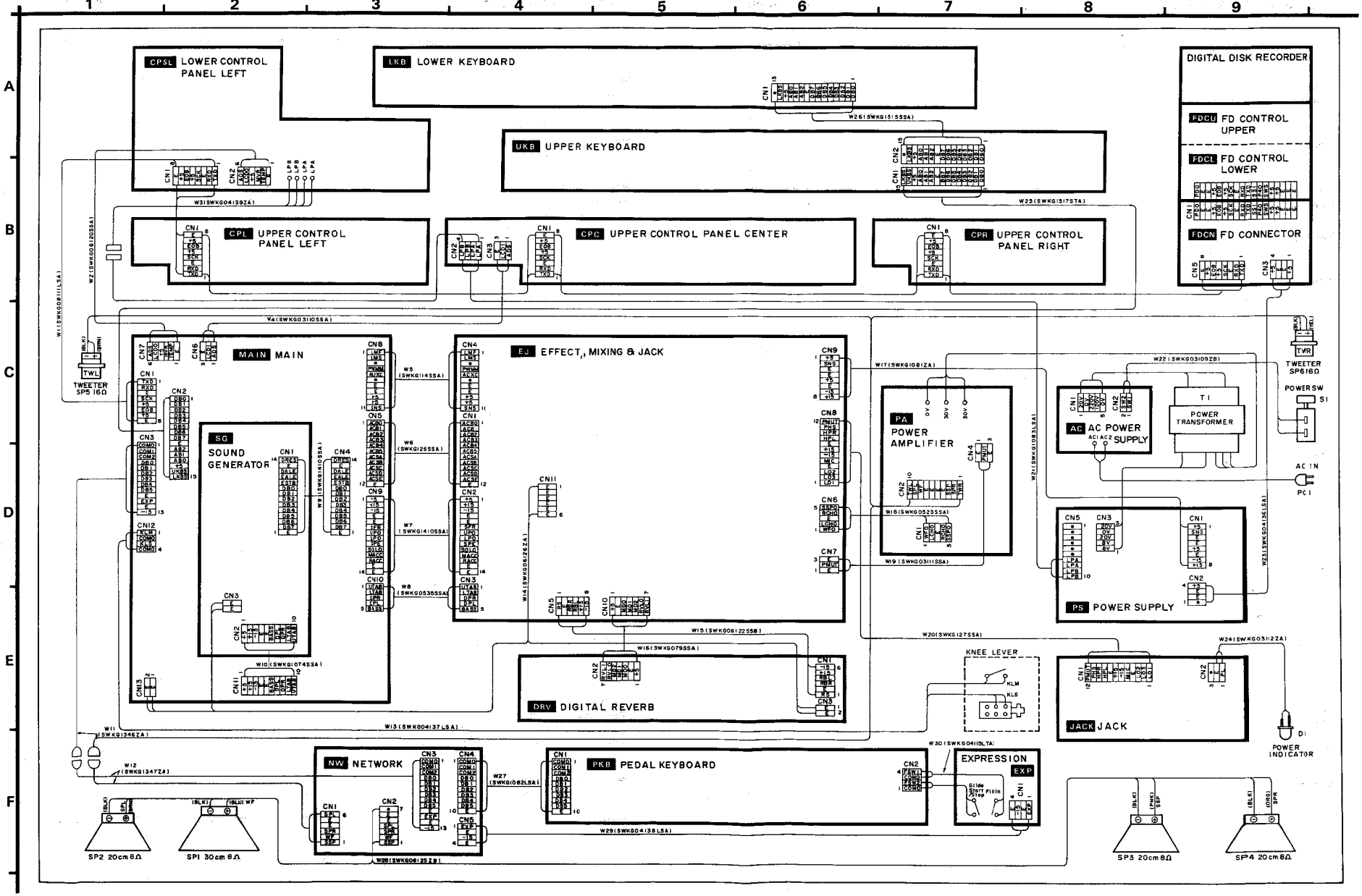
Notes

*○ ×..... Whether or not the data for each of these items is received can be set.

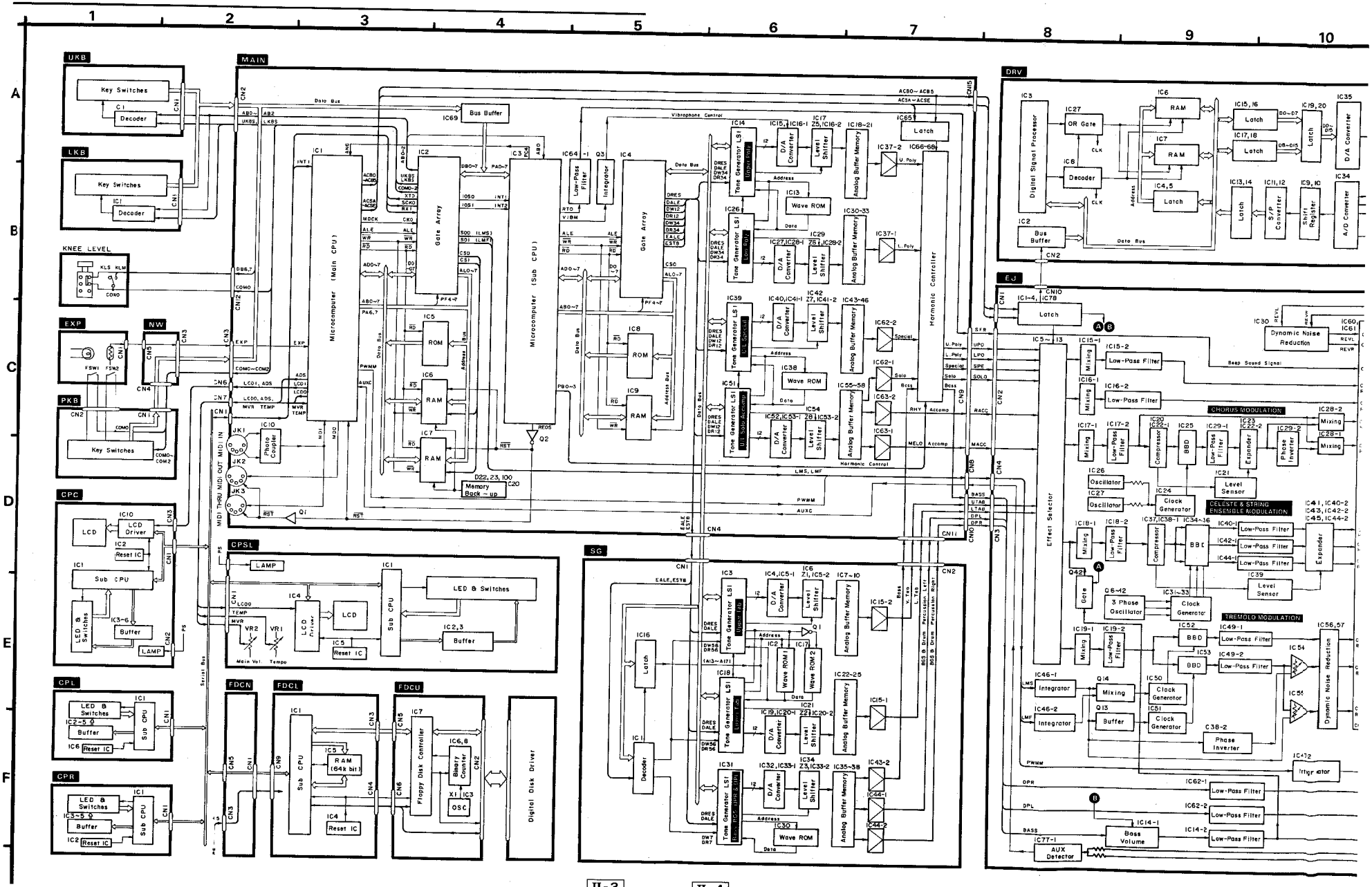
**Changes depending on the selected voice.

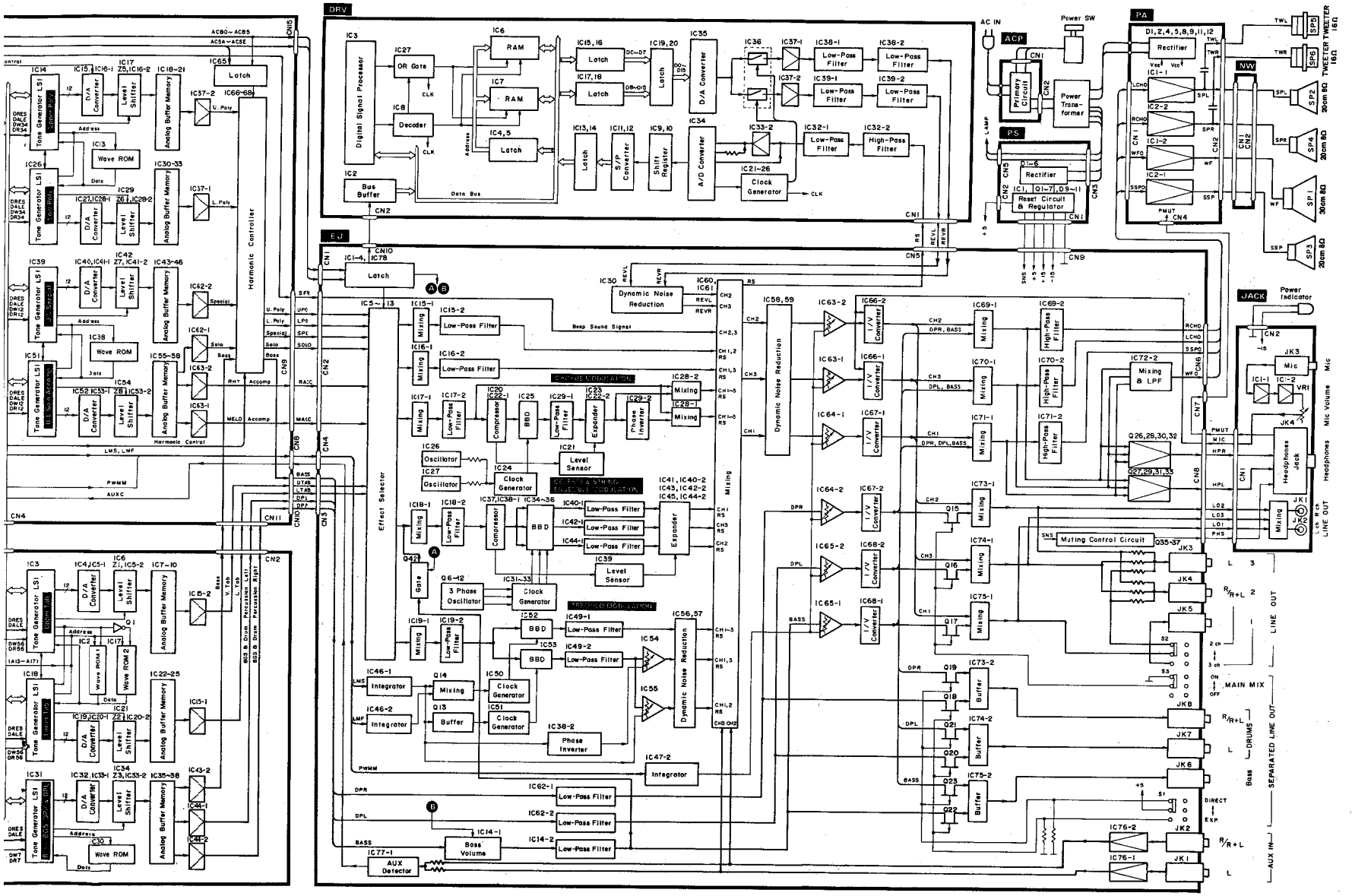
Mode 1: OMNI ON, POLY **Mode 2:** OMNI ON, MONO ○ : Yes
Mode 3: OMNI OFF, POLY **Mode 4:** OMNI OFF, MONO × : No

WIRING CONNECTION DIAGRAM



TOTAL BLOCK DIAGRAM



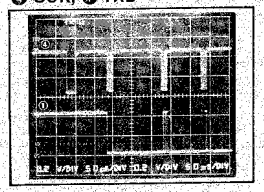

6
7
8
9
10
11
12
13
14
DRV
EJ
PA
ACP
PS
JACK
Digital Signal Processor
Bus Buffer
RAM
Decoder
Latch
D/A Converter
A/D Converter
S/P Converter
Shift Register
Clock Generator
Low-Pass Filter
High-Pass Filter
Primary Circuit
Power Transformer
Rectifier
Reset Circuit & Regulator
Power Switch
AC IN
Power Indicator
Tone Generator LSI
Wave ROM
Analog Buffer Memory
Harmonic Controller
Effect Selector
Dynamic Noise Reduction
Mixing
Compressor
Expander
BBD
Level Sensor
Oscillator
Integrator
Buffer
Bass Volume
AUX Detector
Mixing Control Circuit
Mic
Headphones Jack
MAIN MIX
SEPARATED LINE OUT
LINE OUT
AUX IN
TWEETER 16Ω
30cm 8Ω
20cm 8Ω

MAIN CIRCUIT BOARD

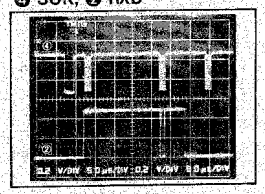
1 2 3 4 5 6 7 8 9 10

A B C D E F

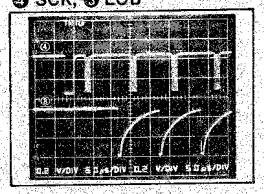
❹ SCK, ❶ TXD



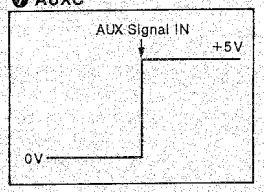
❹ SCK, ❷ RXD



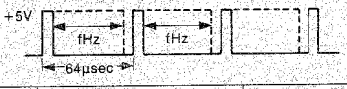
❹ SCK, ❸ EOB



❼ AUXC

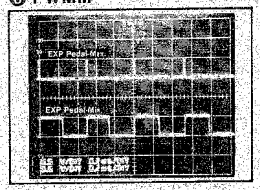


❺ LMF, ❹ LMS



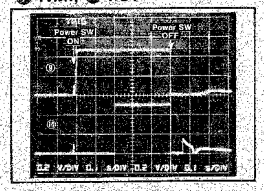
	Tremolo slow	Tremolo Fast
❺ LMF	1Hz	8.4Hz~30.5Hz
❹ LMS	0.5Hz	4.9Hz~8.1Hz

❽ PWMM

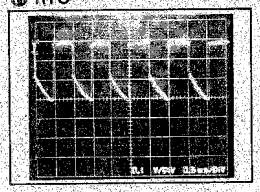


* Main Volume.....Max.
* Upper Key.....ON

❾ NMI, ❿ RST

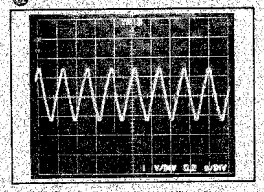


⓫ RTO



* Record.....ON
* Composer 1.....ON
* Upper Key.....ON

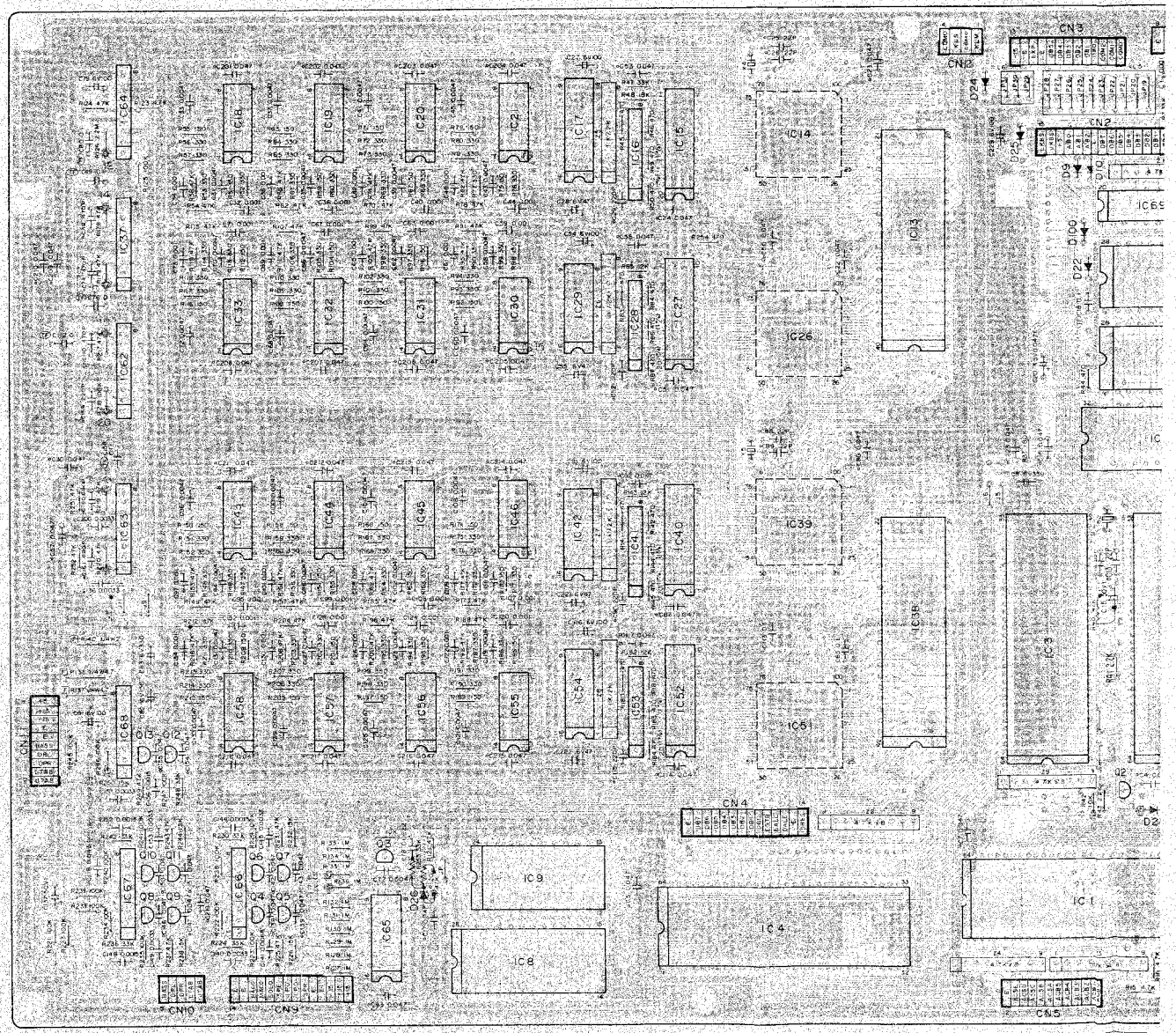
⓬



* U. Poly.....Vibraphone

Circuit view on top of P.C.B.

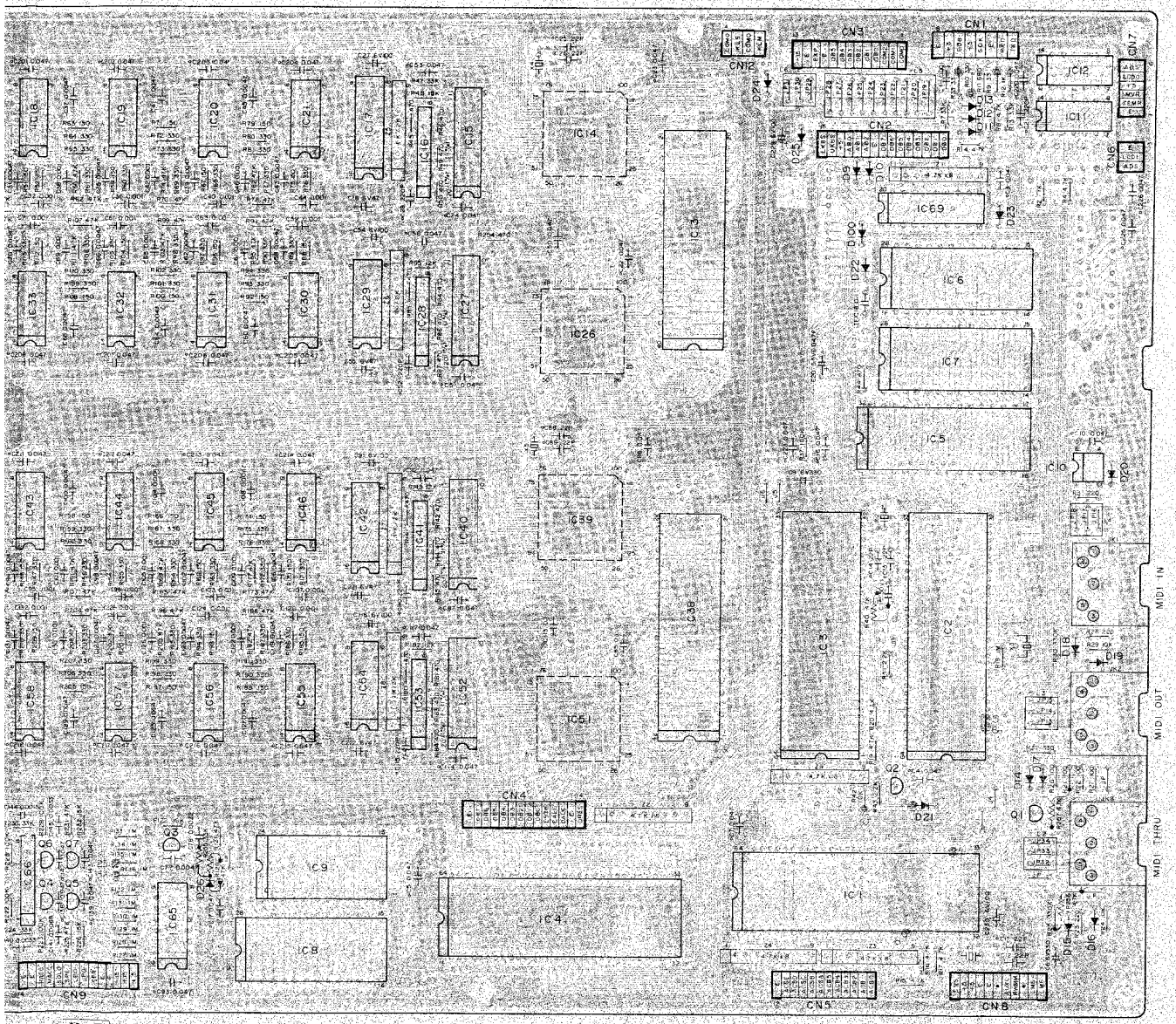
• [M], [MC] and [EZ] areas **SXPG140241**



5 6 7 8 9 10 11 12 13 14

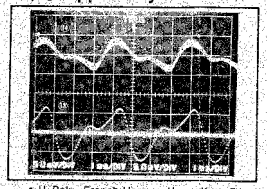
op of P.C.B.

• [M], [MC] and [EZ] areas **SXPG140241** • Other areas **SXPG140211**



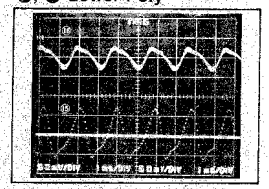
II-7 II-8

⑬, ⑭ Upper Poly



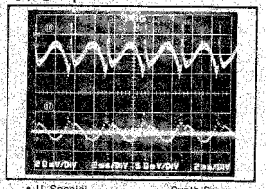
• U. Poly...French Horn • Upper Key...C4
• Poly Volume.....Max.
• Harmonic Control.....Normal

⑮, ⑯ Lower Poly



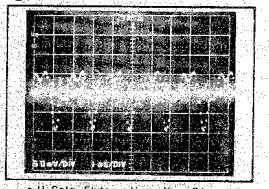
• L. Poly...French Horn • Lower Key...C4
• Poly Volume.....Max.
• Harmonic Control.....Normal

⑰, ⑱ Special



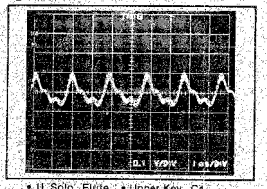
• U. Special.....Synth Brass
• Upper Key...C4 • Special Vol....Max.
• Harmonic Control.....Normal

⑲ Solo



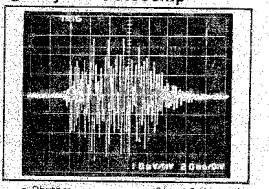
• U. Solo...Flute • Upper Key...C4
• Solo Volume.....Max.
• Harmonic Control.....Normal

⑳ Solo



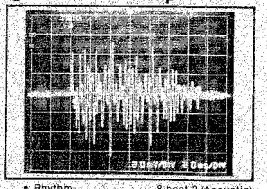
• U. Solo...Flute • Upper Key...C4
• Solo Volume.....Max.
• Harmonic Control.....Normal

㉑ Rhythmic Accomp



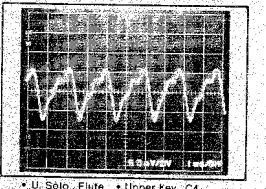
• Rhythm.....8 beat 2 (Acoustic)
• Fingered...ON • Lower Key...C4
• Accomp Balance.....Max.

㉒ Melodic Accomp



• Rhythm.....8 beat 2 (Acoustic)
• Fingered...ON • Lower Key...C4
• Accomp Balance.....Max.

㉓

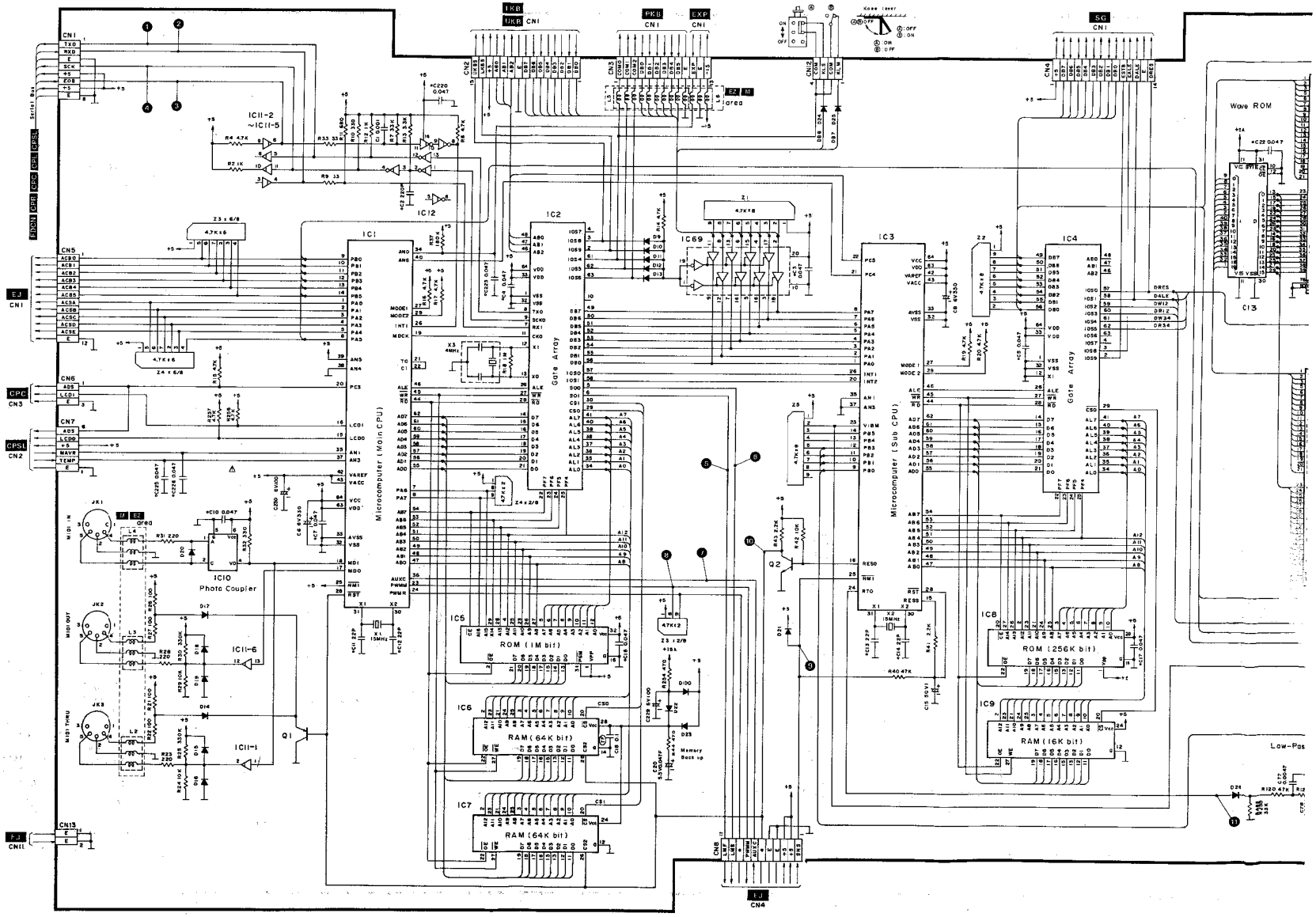


• U. Solo...Flute • Upper Key...C4
• Solo Volume.....Max.
• Harmonic Control.....Normal

㉓, ㉔

	• Harmonic Control		
——	Bright	Normal	Mellow
㉓ SLHN	+5V (H)	0V (L)	+5V (H)
㉔ SLHS	+5V (H)	+5V (H)	0V (L)

MAIN CIRCUIT DIAGRAM



NOTES:

- IC'S

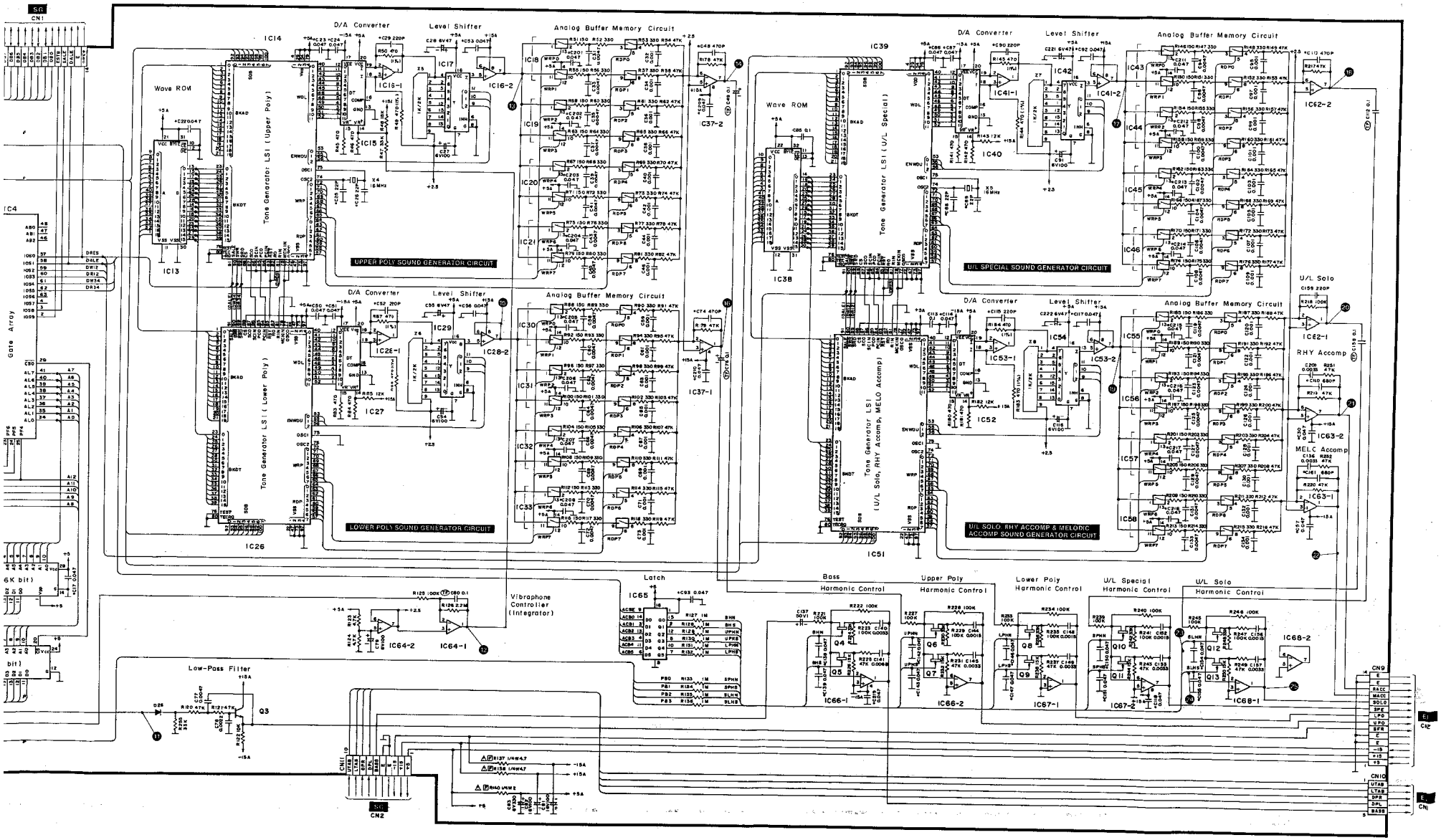
IC1, 3:	SVIG7810HCW
IC2:	SVIGM6050211
IC4:	SVIGM603A114
IC5:	SVIGAGX7AX2
IC6, 7:	SVIGD446415L
IC8:	SVIG2GX7BX2
IC9:	SVIGD446C25
IC10:	SVIGPC900
IC11:	SVIGM74LS07
IC12:	SVIGM74LS05
IC13:	SVIGU3C04158
IC14, 26, 39, 51:	MN6635
IC15, 27, 40, 52:	SVIGBA9221
IC16, 28, 41, 53:	SVIGM5238L
IC17, 29, 42, 54:	SVIGT74H4051
IC18~21, 30~33, 43~46, 55~58:	SVIGM74H4066
IC37, 62~64, 66~68:	SVIGM5218L
IC38 — IC1:	SVIGU3C04161
IC38 — IC2:	SVIGU3C04162
IC65:	MN40174B
IC69:	SVIGM74HC244

- TRANSISTORS

Q1:	2SA1015-GR
Q2, 3:	2SC2320LFG
Q4~13:	2SJ105GR

- DIODES

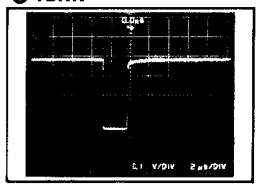
D9~25, 100:	MA165TA5


UPPER POLY SOUND GENERATOR CIRCUIT
LOWER POLY SOUND GENERATOR CIRCUIT
U/L SPECIAL SOUND GENERATOR CIRCUIT
U/L SOLO RHY ACCOMP & MELODIC ACCOMP SOUND GENERATOR CIRCUIT
Tone Generator LSI (Upper Poly)
Tone Generator LSI (Lower Poly)
Tone Generator LSI (U/L Special)
Tone Generator LSI (U/L Solo, RHY Accomp, MELO Accomp)
Wave ROM
D/A Converter
Level Shifter
Analog Buffer Memory Circuit
Gate Array
Vibraphone Controller (Integrator)
Low-Pass Filter
Latch
Bass Harmonic Control
Upper Poly Harmonic Control
Lower Poly Harmonic Control
U/L Special Harmonic Control
U/L Solo Harmonic Control
RHY Accomp
MELC Accomp
U/L Solo

II-11 II-12

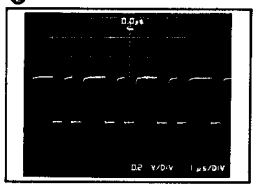
SOUND GENERATOR CIRCUIT DIAGRAM

❶ TBNK

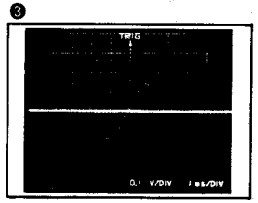


- U. Organ Presets.....5
- Upper Key.....ON

❷

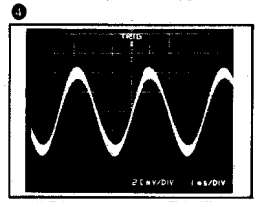


❸



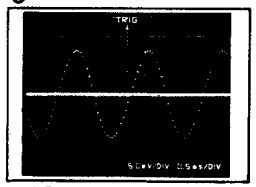
- U. Tab.....Flute 16'
- Upper Key.....C4
- Tab Volume.....Max.

❹

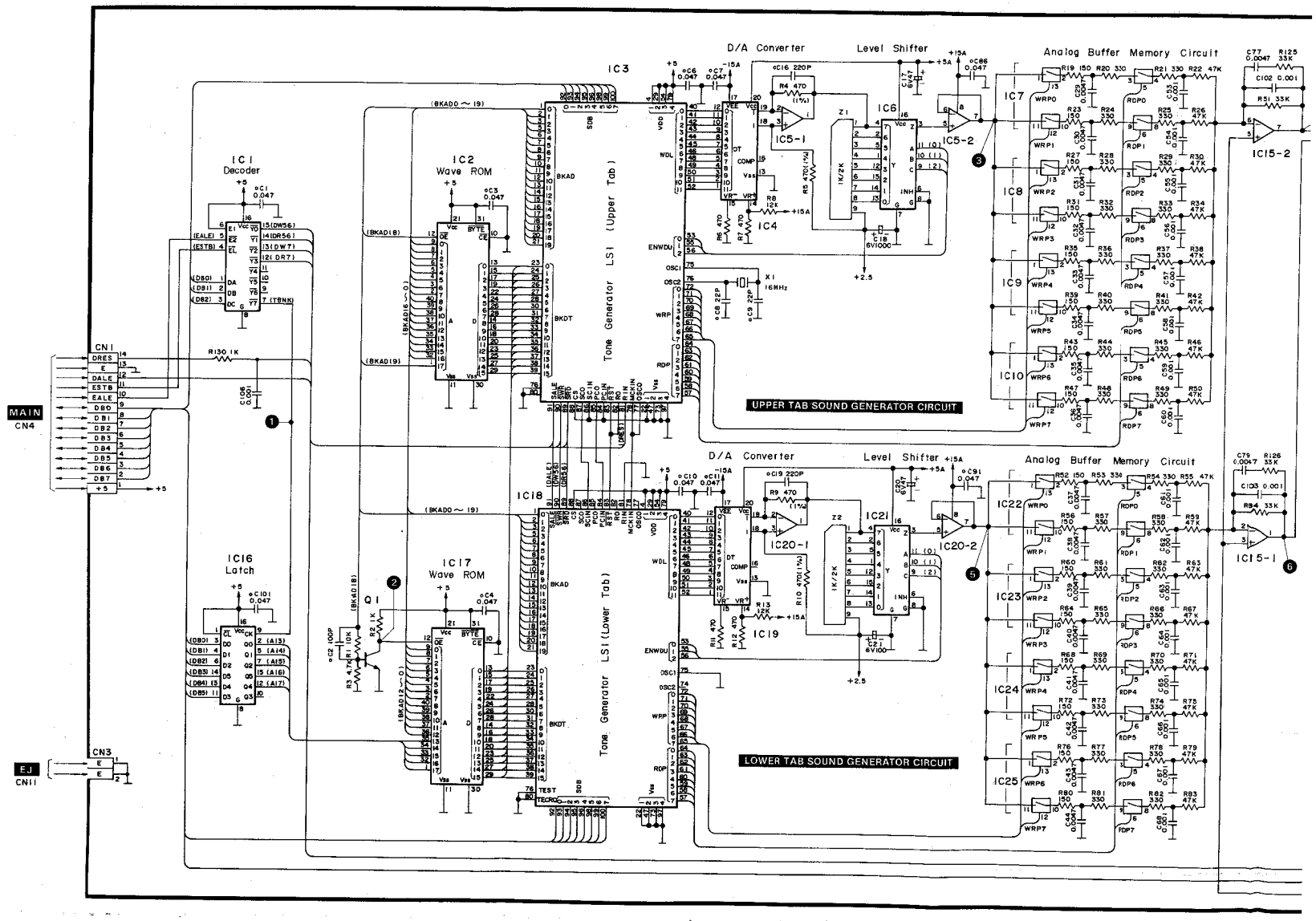


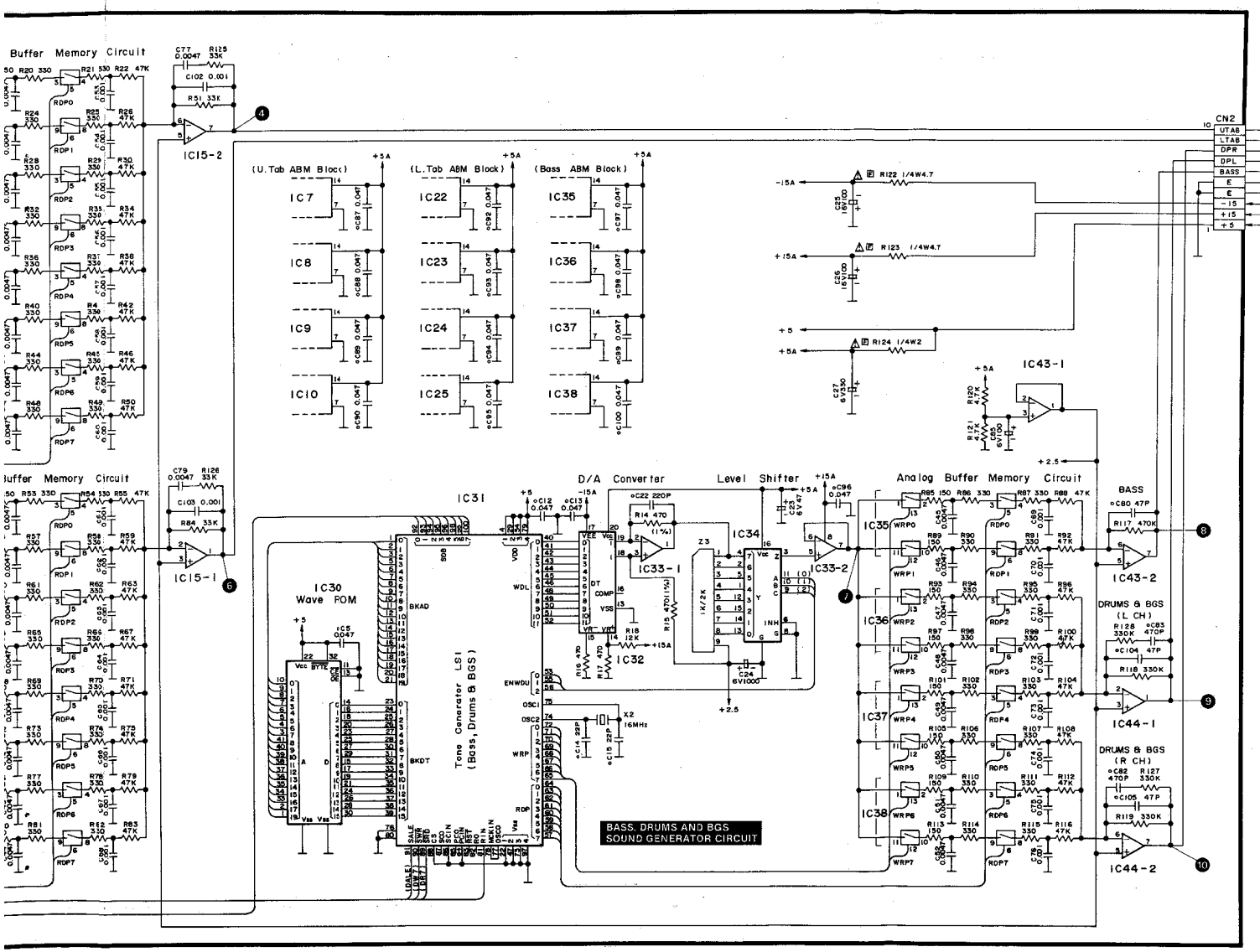
- U. Tab.....Flute 16'
- Upper Key.....C4
- Tab Volume.....Max.

❺



- L. Tab.....Flute 8'
- Lower Key.....C4
- Tab Volume.....Max.





NOTES:

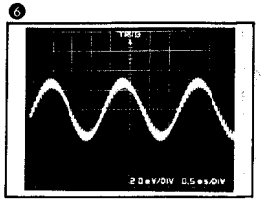
- IC'S

IC1:	SVIGM74LS137
IC2:	SVIGU3C04159
IC3, 18, 31:	MN6635
IC4, 19, 32:	SVIGBA9221
IC5, 20, 33:	SVIGM5238L
IC6, 21, 34:	SVIGT74H4051
IC7~10, 22~25, 35~38:	SVIGM74H4066
IC15, 43, 44:	SVIGM5218L
IC16:	MN40174B
IC17:	SVIGU3C04160
IC30 — IC1:	SVIGU3C04163
IC30 — IC2:	SVIGU3C04164

- TRANSISTOR

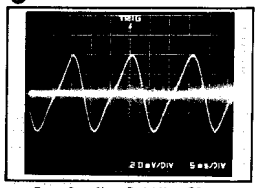
Q1:	2SC1047C

6



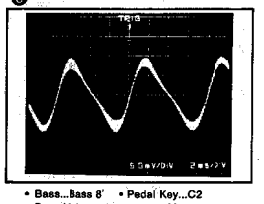
- L. Tab.....Flute 8'
- Lower Key.....C4
- Tab Volume.....Max.

7



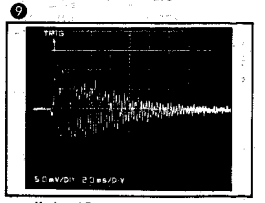
- Bass...Bass 8'
- Pedal Key...C2
- Bass Volume.....Max.
- Harmonic Control.....Normal

8



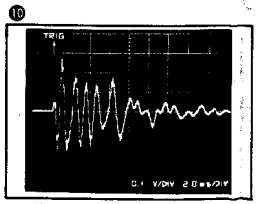
- Bass...Bass 8'
- Pedal Key...C2
- Bass Volume.....Max.

9



- Keyboard Percussion .....ON
- High Bongo.....Lower Key G2, ON
- Drums Volume.....Max.

10

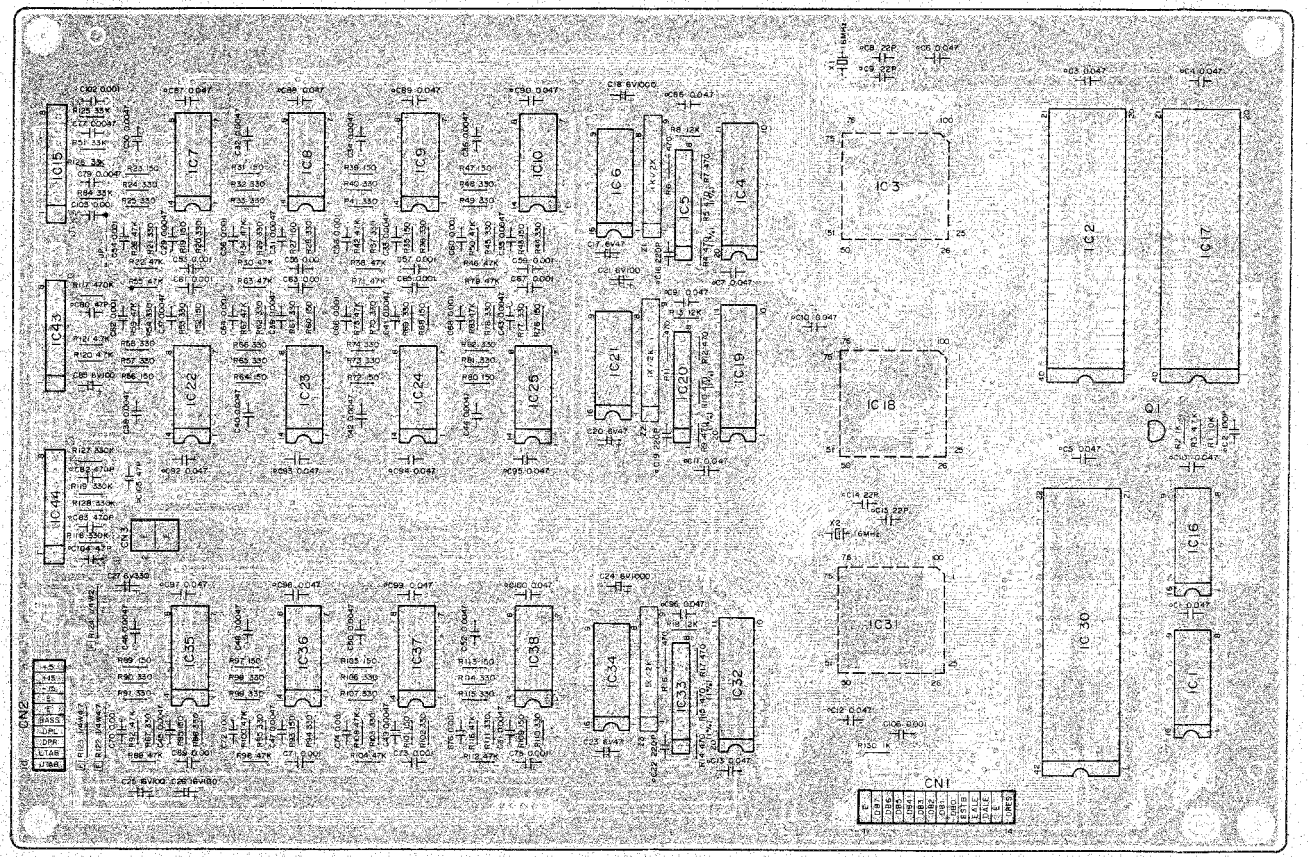


- Keyboard Percussion .....ON
- Bass Drum 2.....Lower Key C#1, ON
- Drums Volume.....Max.

SG SOUND GENERATOR CIRCUIT BOARD

Circuit view on top of P.C.B.

SXPG140311



NOTES:

- IC'S

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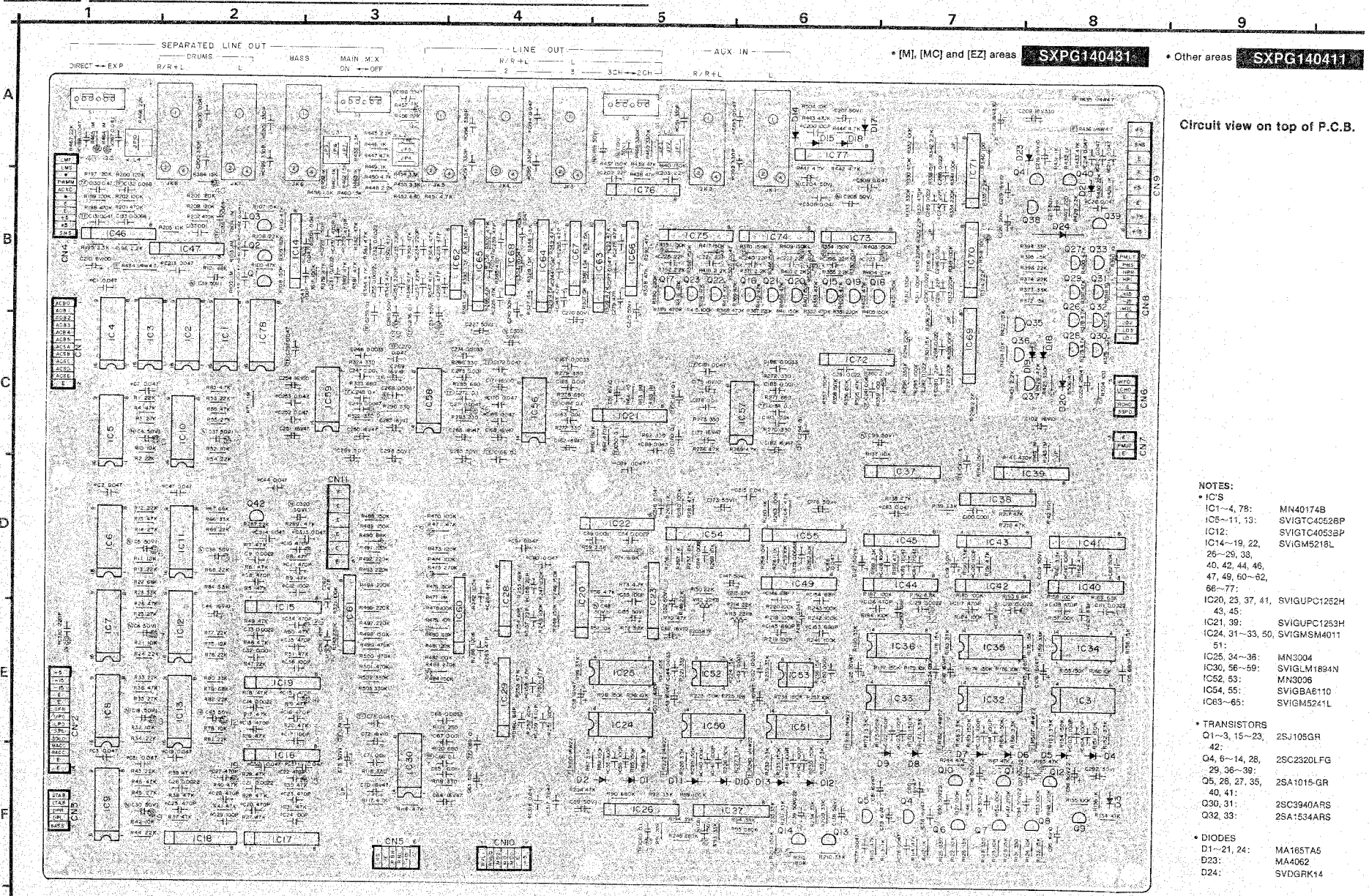
IC5, 20, 33:	SVIGM5238L
IC6, 21, 34:	SVIGT74H4051
IC7~10, 22~25, 35~38:	SVIGM74H4066
IC15, 43, 44:	SVIGM5218L
IC16:	MN40174B
IC17:	SVIGU3C04160
IC30 IC1:	SVIGU3C04163
IC30 IC2:	SVIGU3C04164

- TRANSISTOR

Q1:	2SC1047C

EJ EFFECT, MIXING & JACK CIRCUIT BOARD



• [M], [MC] and [EZ] areas **SXPG140431**

• Other areas **SXPG140411**

Circuit view on top of P.C.B.

NOTES:

• IC'S

IC1~4, 78:	MN40174B
IC5~11, 13:	SVIGTC4052BP
IC12:	SVIGTC4053BP
IC14~19, 22, 26~29, 38, 40, 42, 44, 46, 47, 49, 60~62, 66~77:	SViGM5218L
IC20, 23, 37, 41, 43, 45:	SVIGUPC1252H
IC21, 39:	SVIGUPC1253H
IC24, 31~33, 50, 51:	SVIGMSM4011
IC25, 34~36:	MN3004
IC30, 56~59:	SVIGLM1894N
IC52, 53:	MN3006
IC54, 55:	SViGBA6110
IC63~65:	SVIGM5241L

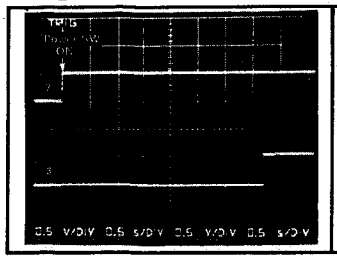
• TRANSISTORS

Q1~3, 15~23, 42:	2SJ105GR
Q4, 6~14, 28, 29, 36~39:	2SC2320LFG
Q5, 26, 27, 35, 40, 41:	2SA1015-GR
Q30, 31:	2SC3940ARS
Q32, 33:	2SA1534ARS

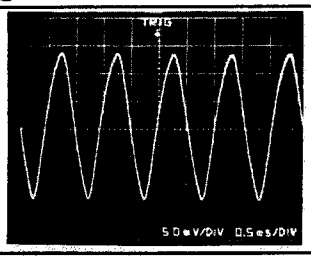
• DIODES

D1~21, 24:	MA165TA5
D23:	MA4062
D24:	SVDGRK14

❷, ❸

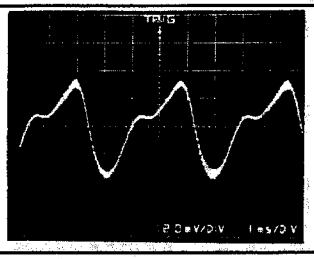


❹ SFR



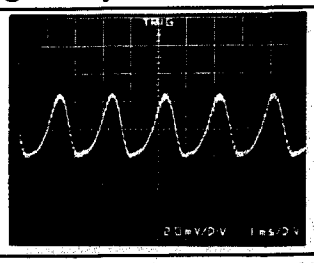
- Record .....ON
- Composer 1.....ON
- Upper Key.....ON

❺ U. Poly



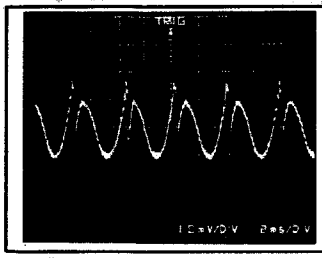
- U. Poly...French Horn • Upper Key...C4
- Upper Poly Volume .....Max.
- Harmonic Control.....Normal

❻ L. Poly



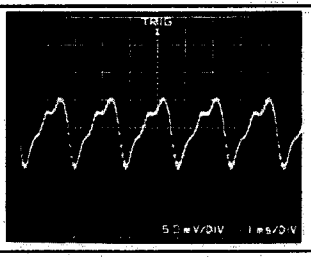
- L. Poly...French Horn • Lower Key...C4
- Lower Poly Volume.....Max.
- Harmonic Control.....Normal

❼ Special



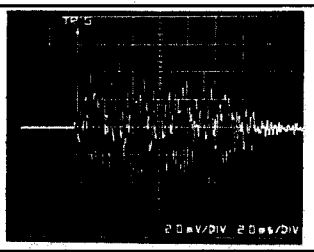
- U. Special...Synth brass • Upper Key...C4
- Special Volume .....Max.
- Harmonic Control.....Normal

❽ Solo



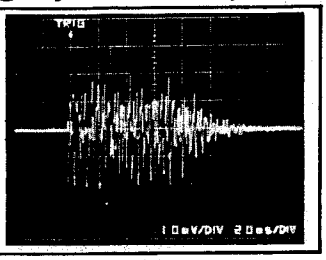
- U. Solo...Flute • Upper Key...C4
- Solo Volume.....Max.
- Harmonic Control.....Normal

❾ Melodic Accomp

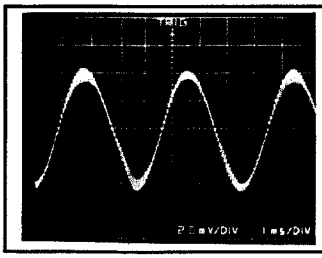


- Rhythm .....8 beat 2 (Acoustic)
- Fingeard...ON • Lower Key, C3...ON
- Accomp Volume.....Max.

❿ Rhythmic Accomp

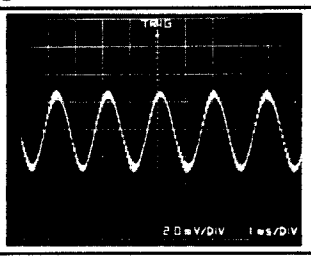


⓫ U. Tab



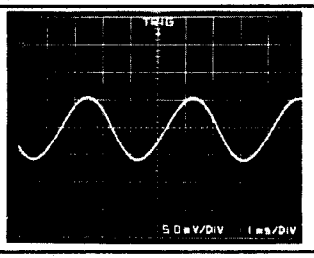
- U. Tab .....Flute 16'
- Upper Key.....C4
- Tab Volume.....Max.

⓬ L. Tab



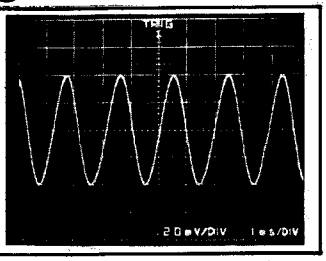
- L. Tab.....Flute 8'
- Lower Key C4
- Tab Volume.....Max.

⓭



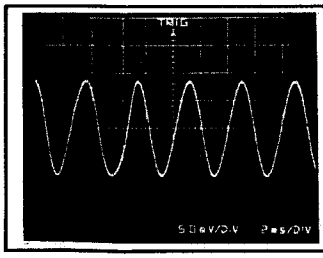
- U. Tab .....Flute 16'
- Upper Key.....C4
- Tab Volume.....Max.

⓮



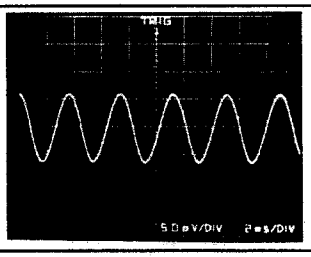
- L. Tab.....Flute 8'
- Lower Key C4
- Tab Volume.....Max.

⓯

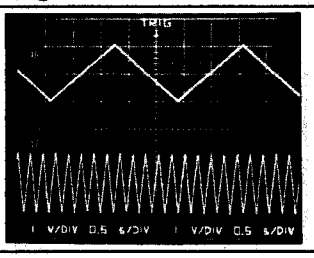


- Chorus .....U. Tab ON
- U. Tab .....Flute 16'
- Upper Key...C4 • Tab Volume...Max.

⓰

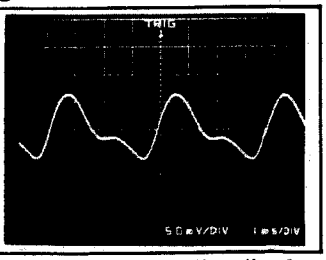


⓱, ⓲



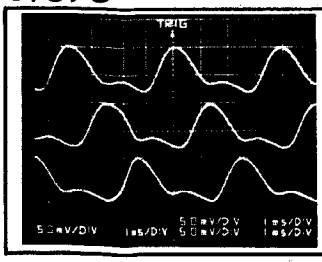
- Chorus .....U. Tab ON

⓳



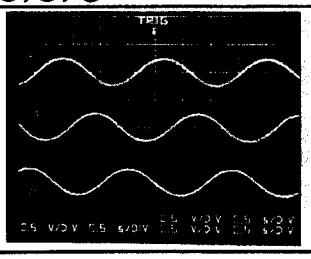
- Chorus...U. Poly ON • Upper Key...C4
- U. Poly...French Horn • Poly Vol....Max.
- Harmonic Control.....Normal

⓴, ㉑, ㉒



- Celeste...U. Poly ON • Upper Key...C4
- U. Poly...French Horn • Poly Vol....Max.
- Harmonic Control.....Normal

㉓, ㉔, ㉕



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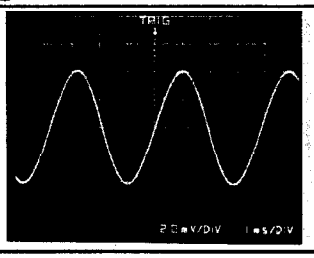
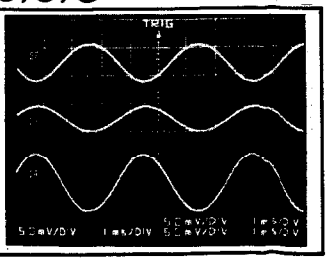
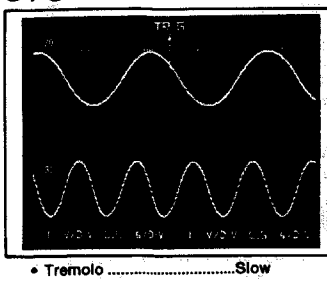


- Tremolo .....U. Tab ON
- U. Tab .....Flute 16'
- Upper Key...C4 • Tab Volume...Max.

㉗, ㉘, ㉙

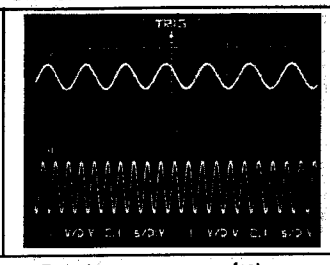


㉚, ㉛



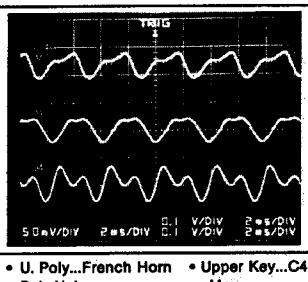
- Tremolo .....Slow

㉚, ㉛



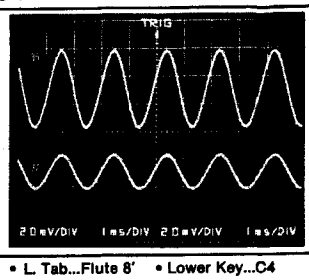
- Tremolo .....fast

㉜, ㉝, ㉞



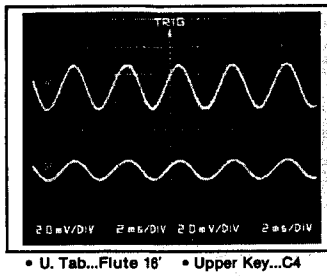
- U. Poly...French Horn • Upper Key...C4
- Poly Volume.....Max.
- Reverb...HALL 3 Depth...Step 3

㉟, ㊲



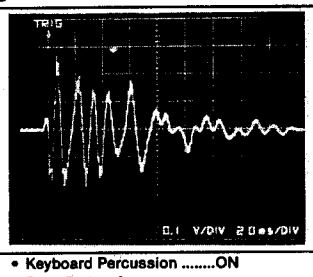
- L. Tab...Flute 8' • Lower Key...C4
- Tab Volume.....Max.
- Reverb Depth .....OFF

㊱, ㊲



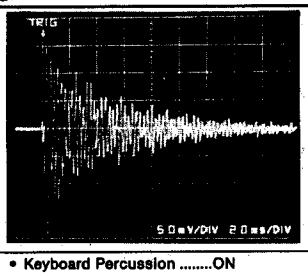
- U. Tab...Flute 16' • Upper Key...C4
- Tab Volume.....Max.
- Reverb Depth .....OFF

㊳



- Keyboard Percussion .....ON
- Bass Drums 2 (Lower Key C#1).....ON
- Drums Volume.....Max.

㊴



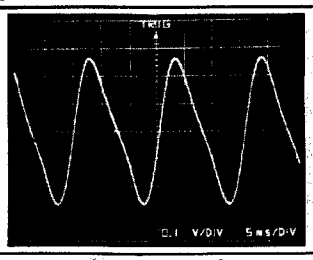
- Keyboard Percussion .....ON
- High Bongo (Lower Key G2) .....ON
- Drums Volume.....Max.

㊵ Main Vol., EXP Control

EXP \ Main Vol.	MAX.	MIN.
MAX.	−0.4V	−3.5V
MIN.	−6.2V	−10V

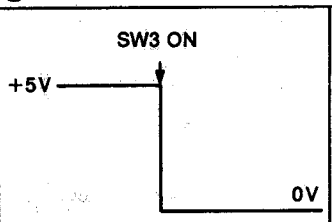
- Upper Key.....ON

㊶



- Bass...16' • Pedal Key...C2
- Bass Volume.....Max.

㊷



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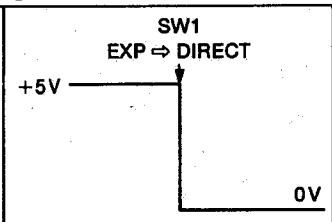

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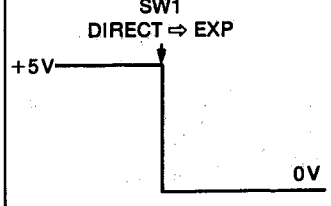
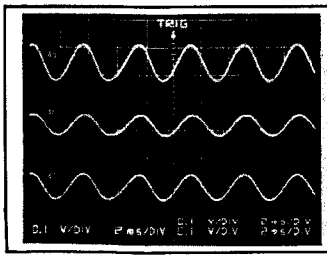
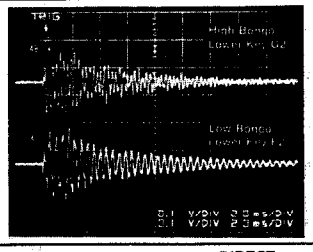


㊺, ㊻, ㊼



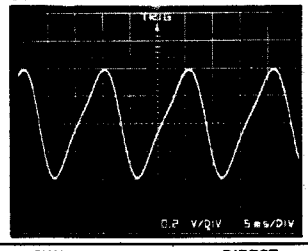
- U. Tab...Flute 16' • Upper Key...C4
- Reverb Depth.....OFF
- EXP, Main Vol., Tab Vol. ...Max.

㊽, ㊾



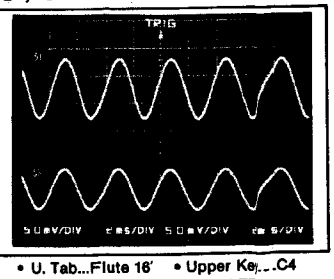
- SW1.....DIRECT
- Drums Volume.....Max.

㊿



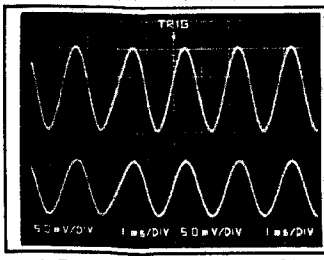
- SW1.....DIRECT
- Bass...16' • Pedal Key...C2
- Bass Volume.....Max.

(51), (53)



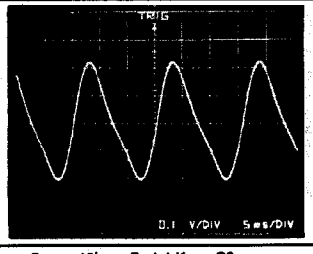
- U. Tab...Flute 16' • Upper Key...C4
- Reverb Depth.....OFF
- EXP, Main Vol., Tab Vol. ...Max.

(52), (53)



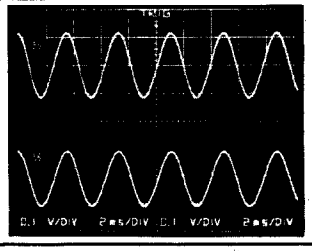
- L. Tab...Flute 8' • Lower Key...C4
- Reverb Depth.....OFF
- EXP, Main Vol., Tab Vol. ...Max.

(54)



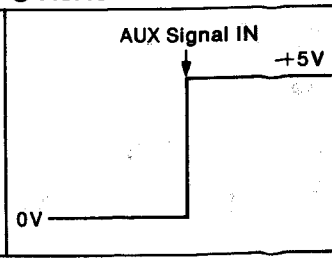
- Bass...16' • Pedal Key...C2
- EXP, Main Volume .....Max.
- Bass Volume.....Max.

(55), (56)

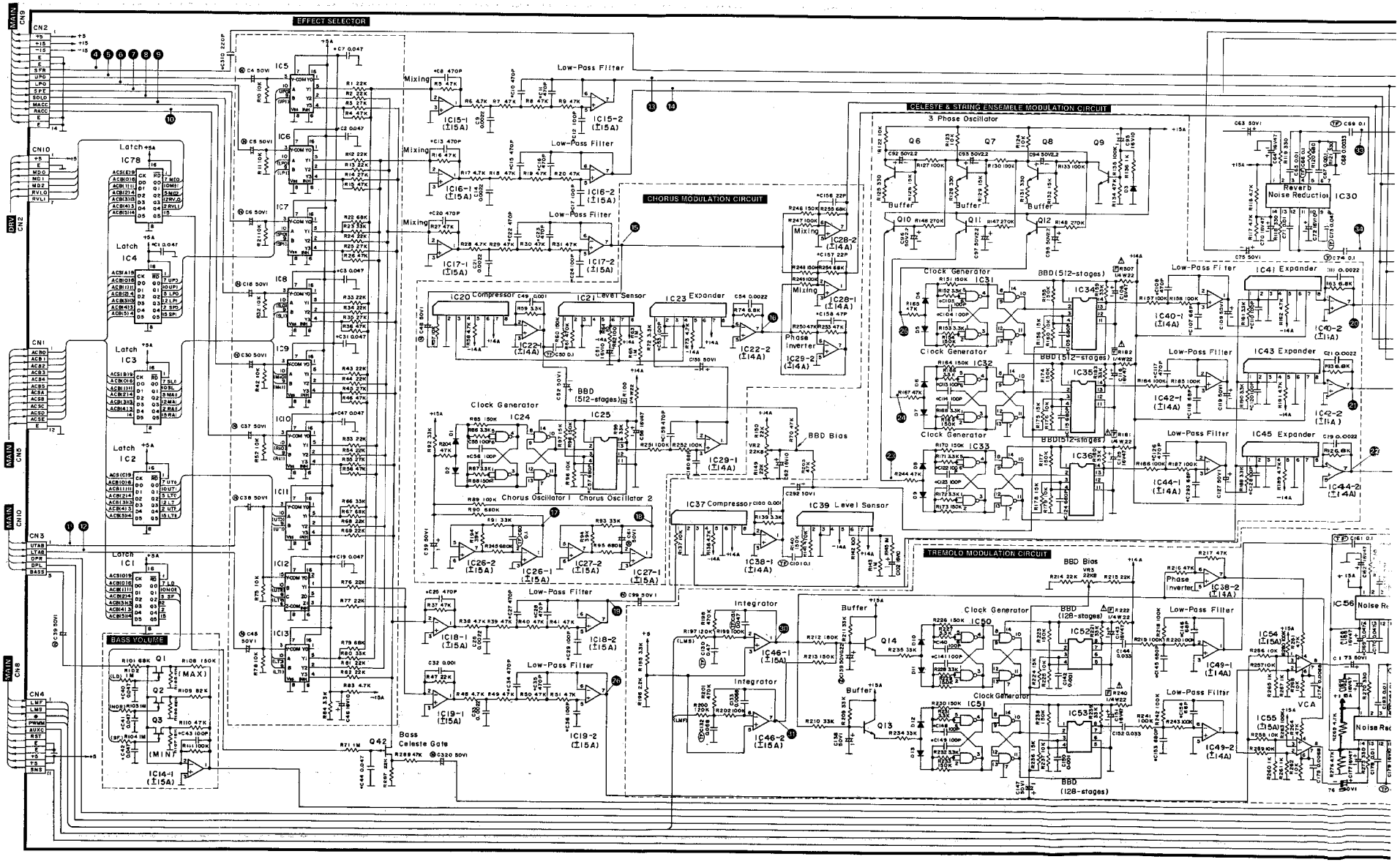


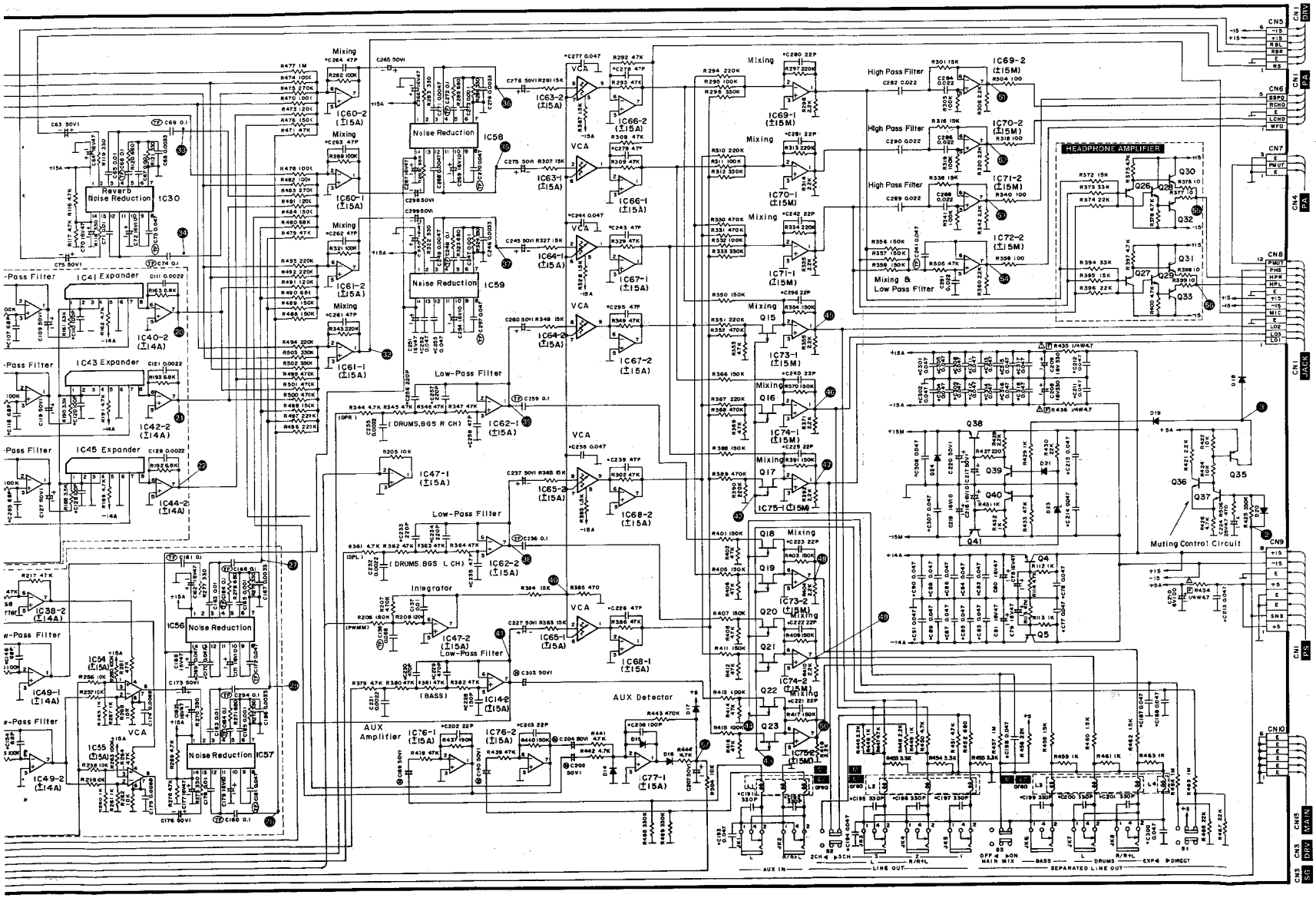
- U. Tab...Flute 16' • Upper Key...C4
- EXP, Main Vol., Tab Vol. ...Max.
- Reverb.....OFF

(57) AUXC



EJ EFFECT, MIXING & JACK CIRCUIT DIAGRAM





NOTES:

- IC'S

IC1~4, 78:	MN40174B
IC5~11, 13:	SVIGTC4052BP
IC12:	SVIGTC4053BP
IC14~19, 22, 26~29, 36, 40, 42, 44, 46, 47, 49, 60~62, 66~77:	SVIGM5218L
IC20, 23, 37, 41, 43, 45:	SVIGUPC1252H
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IC25, 34~36:	MN3004
IC30, 56~59:	SVIGLM1894N
IC52, 53:	MN3006
IC54, 55:	SVIGBA6110
IC63~65:	SVIGM5241L

- TRANSISTORS

Q1~3, 15~23, 42:	2SJ105GR
Q4, 6~14, 28, 29, 36~39:	2SC2320LFG
Q5, 26, 27 35, 40, 41:	2SA1015-GR
Q30, 31:	2SC3940ARS
Q32, 33:	2SA1534ARS

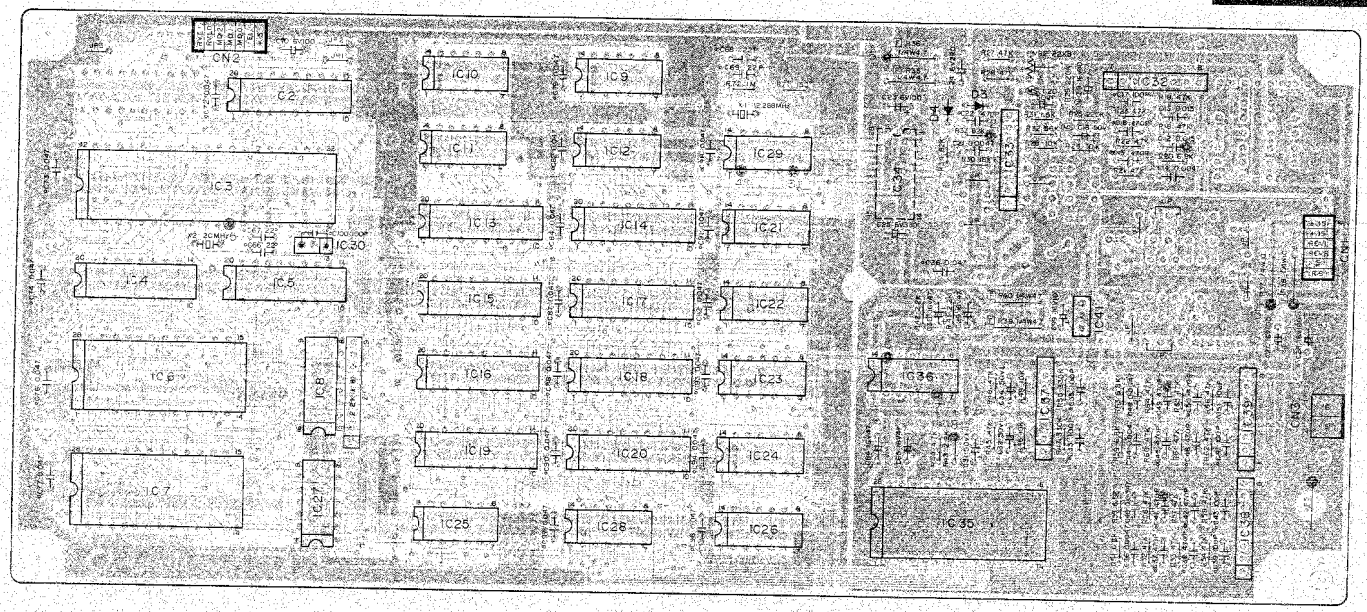
- DIODES

D1~21, 24:	MA165TA5
D23:	MA4062
D24:	SVDGRK14

DIGITAL REVERB CIRCUIT BOARD

Circuit view on top of P.C.B.

SXPG141811



NOTES:

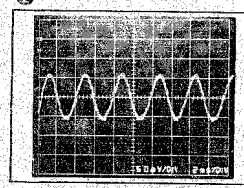
- IC'S

IC2:	SVIGM74HC244
IC3:	SVIG87064071
IC4, 5, 13~20:	SVIGM74HC374
IC6, 7:	SVIGHM65256
IC8:	SVIGM74HC138
IC9~12, 24:	SVIGM74H164
IC21~23:	SVIGM74H74
IC25, 27:	SVIGM74H32
IC26:	SVIGM74H08
IC28, 29:	SVIGM74H04
IC30:	MN1280R
IC32, 37~39:	SVIGM5218L
IC33:	SVIGM5220L
IC34:	MN6305S
IC35:	SVIGPCM54
IC36:	SVIGM74H4066
IC41:	SVIGM5278L05

- DIODES

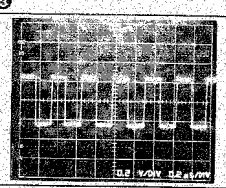
D3, 4:	MA165TA5

❷



- U. Tab...Flute 16' - Upper Key...C4
- Tab Volume.....Max.
- Reverb Mode.....HALE 3
- Depth.....Step 3

❸



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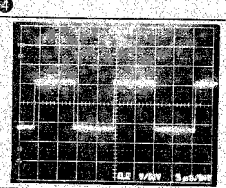
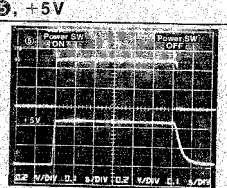
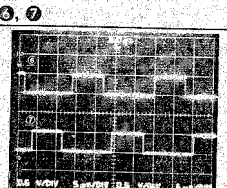


❺, +5V



❻, ❼



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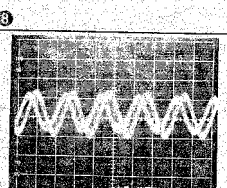
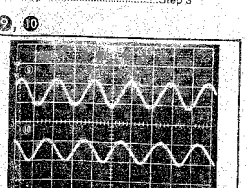


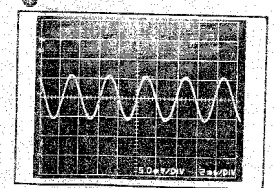
- U. Tab...Flute 16' - Upper Key...C4
- Tab Volume.....Max.
- Reverb Mode.....HALE 3
- Depth.....Step 3

❾, ❿



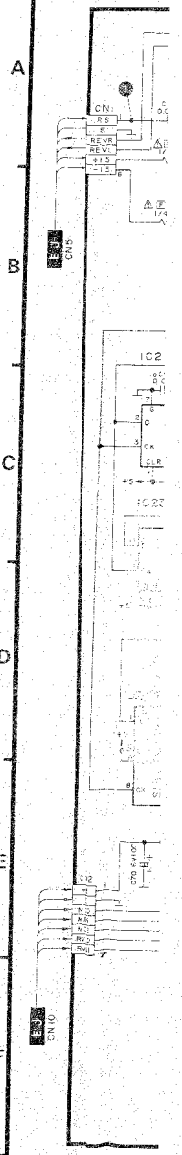
- U. Tab...Flute 16' - Upper Key...C4
- Tab Volume.....Max.
- Reverb Mode.....HALE 3
- Depth.....Step 3

❶

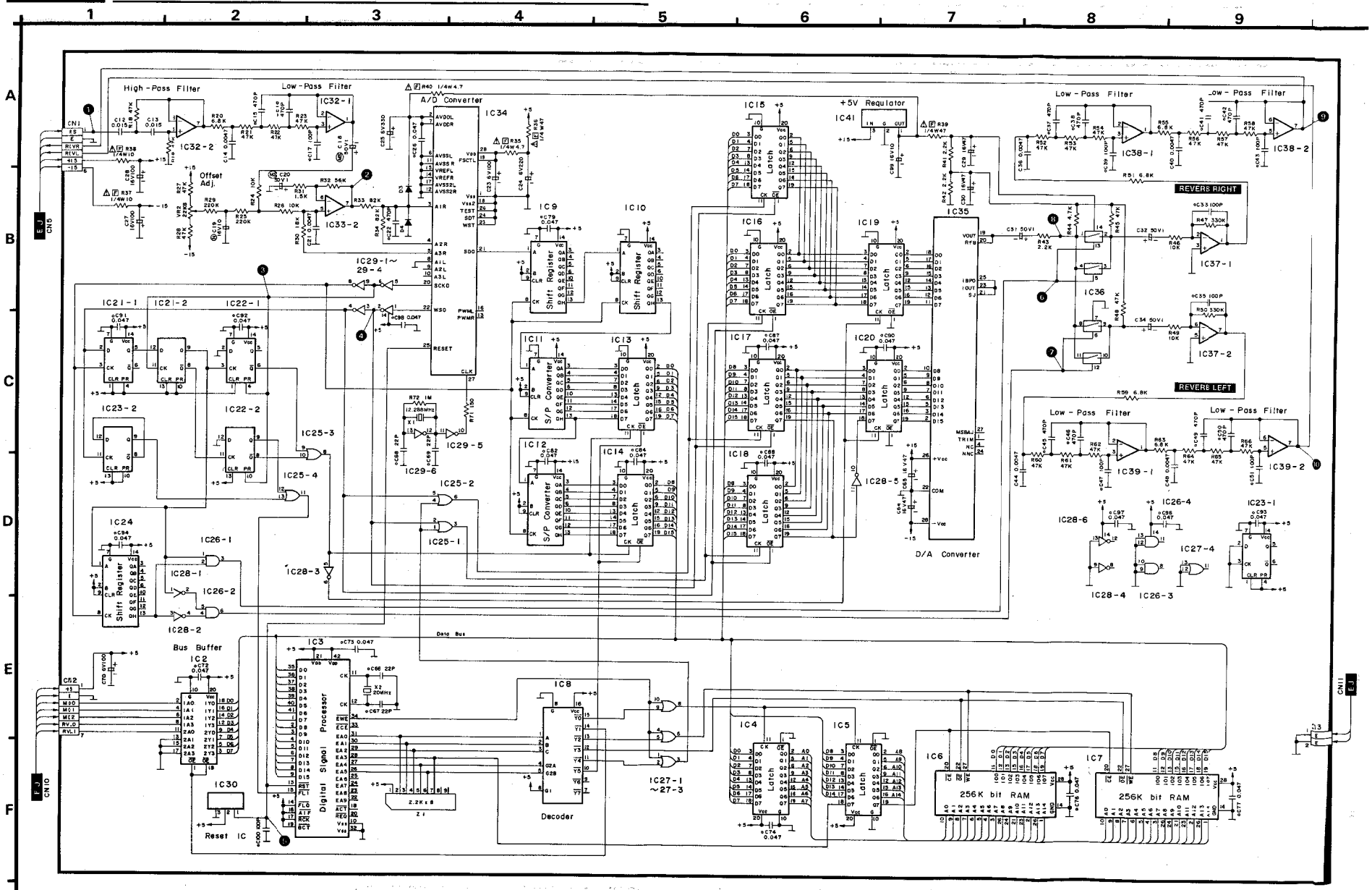


- U. Tab...Flute 16' - Upper Key...C4
- Tab Volume.....Max.
- Reverb Mode.....HALE 3
- Depth.....Step 3

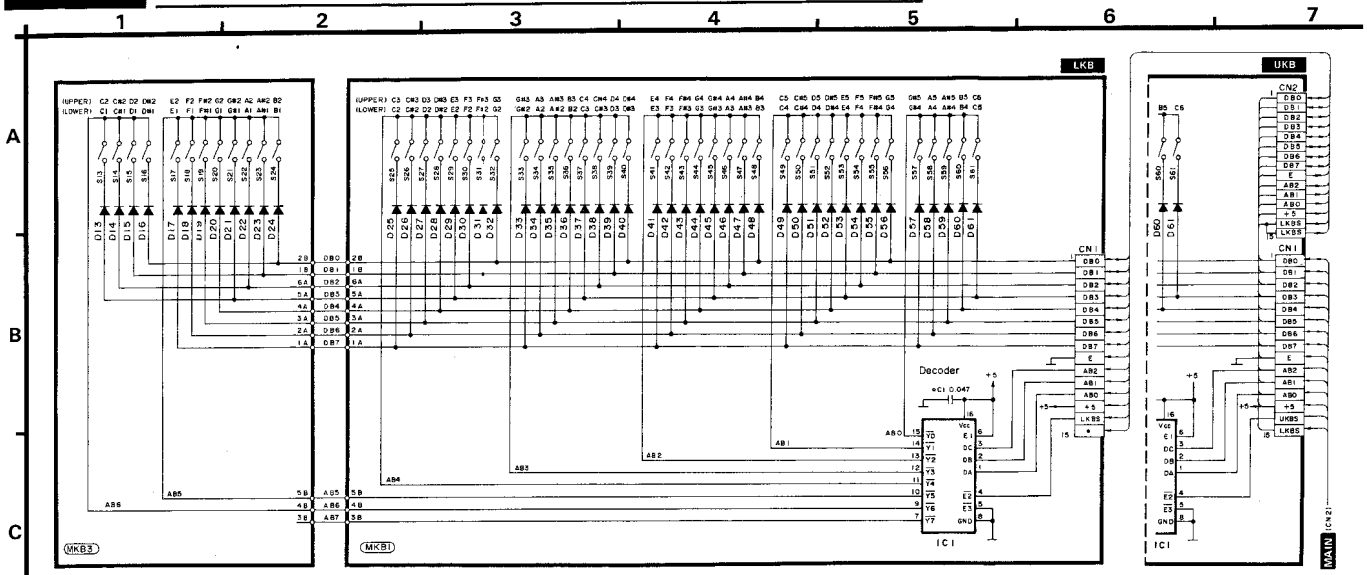
DRV



DRV DIGITAL REVERB CIRCUIT DIAGRAM



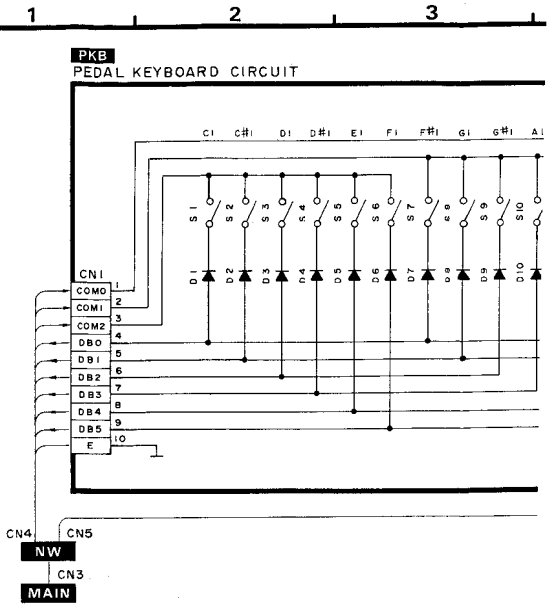
MKB MANUAL KEYBOARD CIRCUIT DIAGRAM



MKB3
NOTES:
- DIODES
  D13~24: MA162A

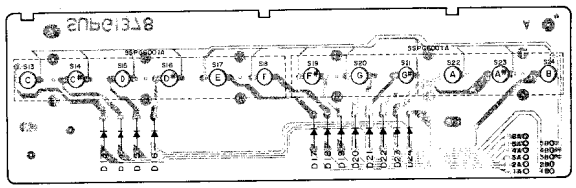
MKB1
NOTES:
- IC
  IC1: SVIGM74LS138
- DIODES
  D25~61: MA162A

PKB PEDAL KEYBOARD CIRCUIT D

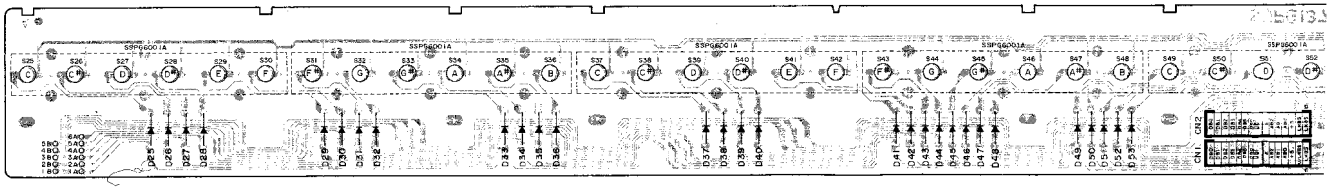


MKB MANUAL KEYBOARD CIRCUIT BOARD

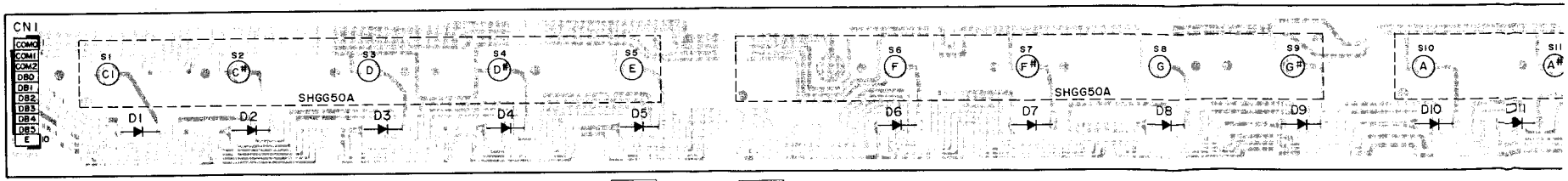
MKB3 MANUAL KEYBOARD 3 **SXPG137811**



MKB1 MANUAL KEYBOARD 1 CIRCUIT BOARD

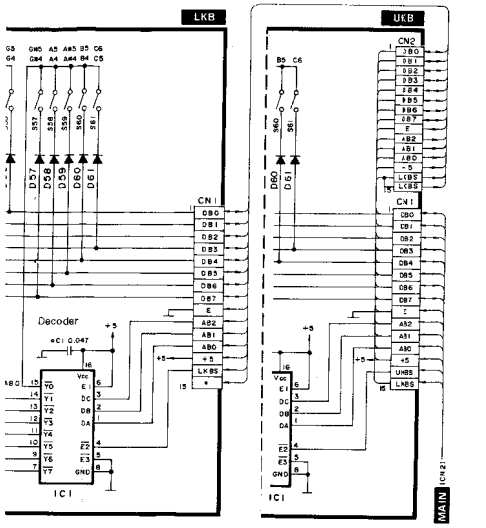


PKB PEDAL KEYBOARD CIRCUIT BOARD



PKB PEDAL KEYBOARD CIRCUIT DIAGRAM

EXP EXP CIRCUIT

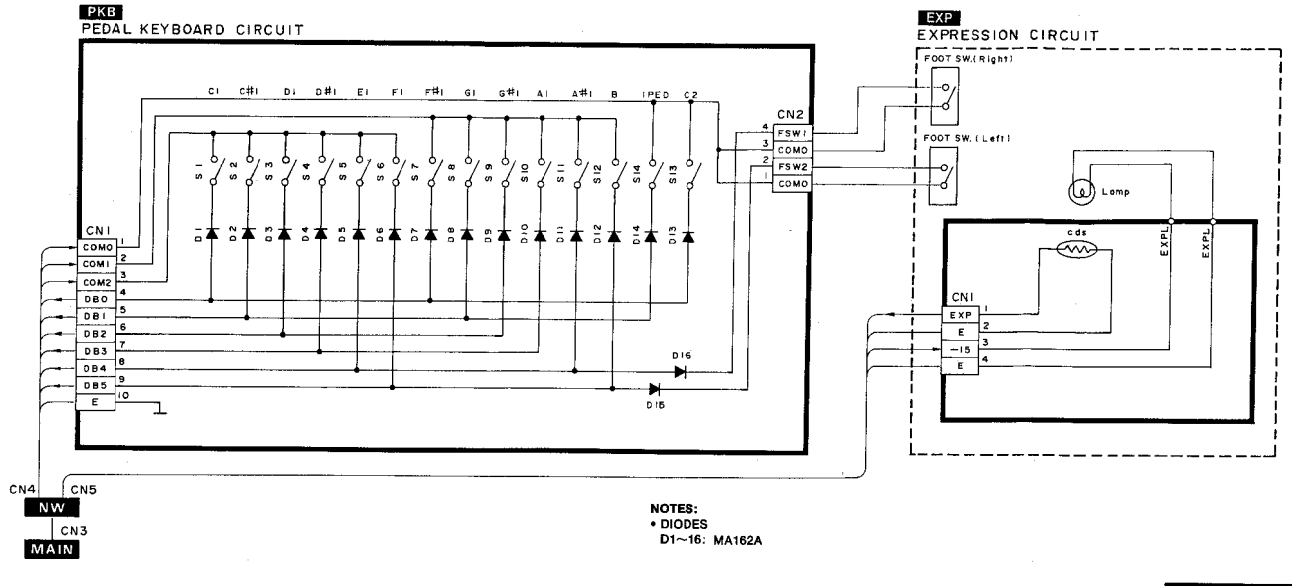


MKB3

NOTES:
- DIODES
  D13~24: MA162A

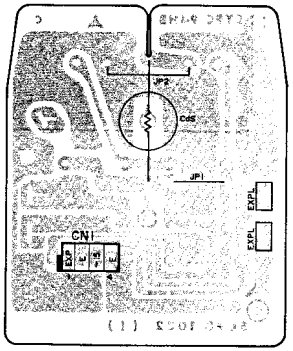
MKB1

NOTES:
- IC
  IC1: SVIGM74LS138
- DIODES
  D25~61: MA162A

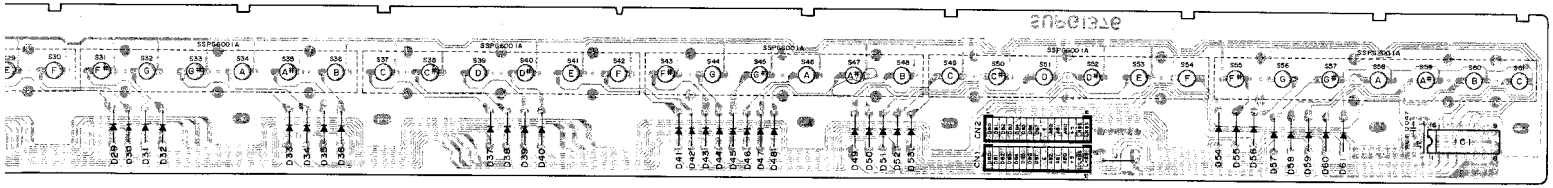


NOTES:
- DIODES
  D1~16: MA162A

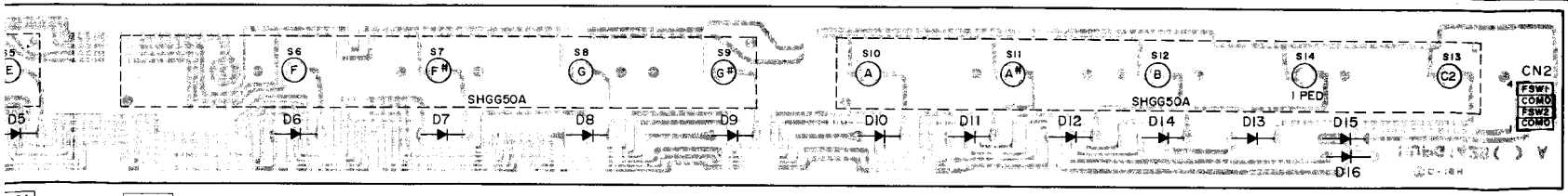
EXP P.C.B. SXPG103211



EYBOARD 1 CIRCUIT BOARD SXPG137611



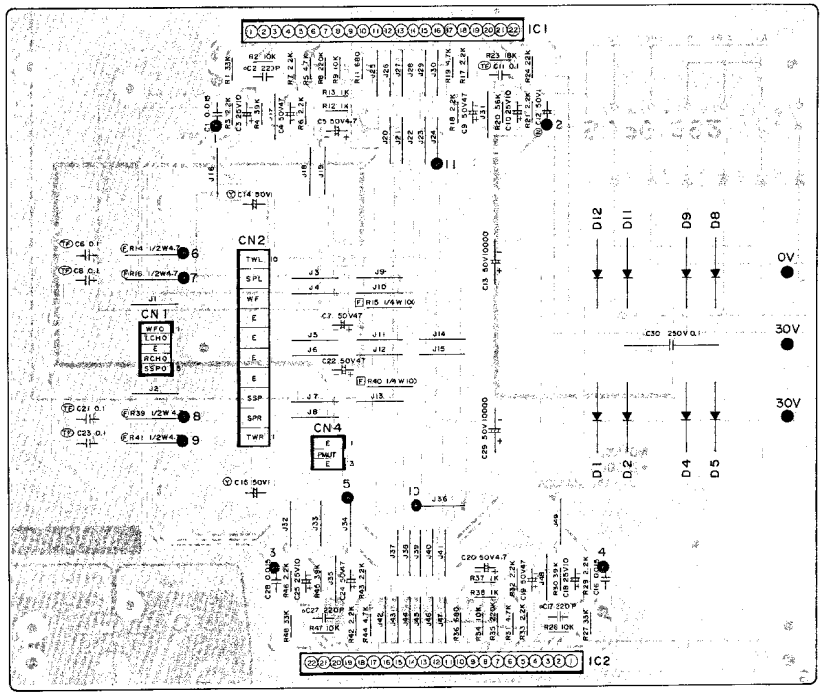
SXPG142811



AC POWER SUPPLY, POWER SUPPLY, POWER AMPLIFIER, NETWORK CIRCUIT BOARD

PA POWER AMPLIFIER CIRCUIT BOARD

SXPG139231



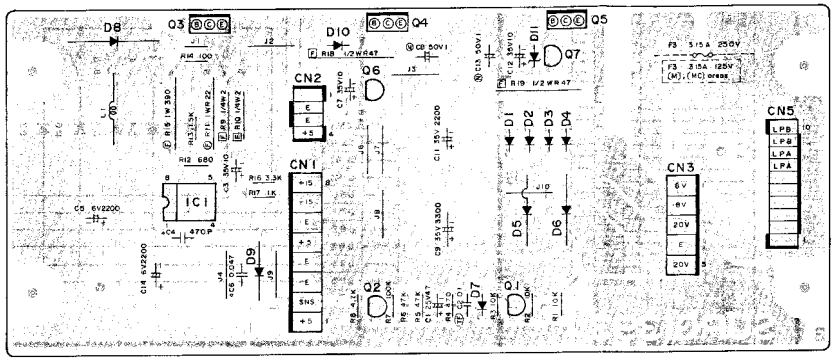
PA

NOTES:

- IC'S
  - IC1, 2: SVIGS4221M2M
- DIODES
  - D1, 2, 4, 5, 8, 9, 11, 12: SVDS3V20

PS POWER SUPPLY CIRCUIT BOARD

- Products for [M] [MC] areas SXPG139351
- Except for [M] [MC] areas SXPG139341



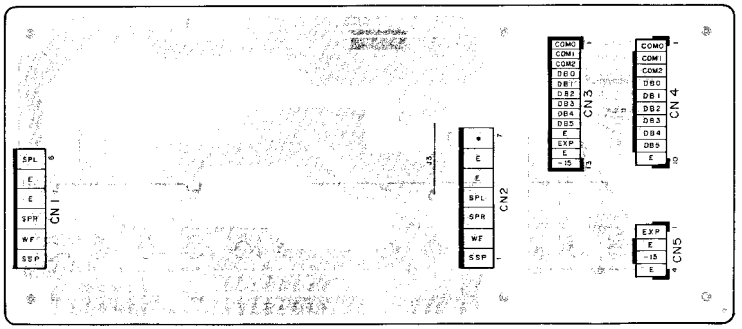
PS

NOTES:

- IC'S
  - IC1: S
- TRANSISTORS
  - Q1, 2: 2S
  - Q3: 2S
  - Q4: 2S
  - Q5: 2S
  - Q6, 7: 2S
- DIODES
  - D1~4: S
  - D5, 6: S
  - D7: M
  - D8: S
  - D9: M
  - D10, 11: M
- FUSES
  - F3 [N] [MC]: XI
  - F5: XI

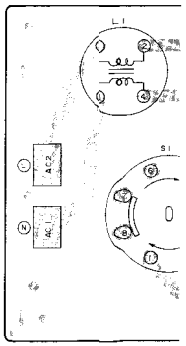
NW NETWORK CIRCUIT BOARD

SXPG140511E

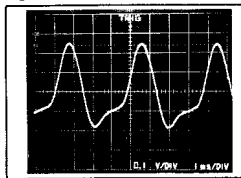


ACP AC POWE

- Products for [EK] [XS

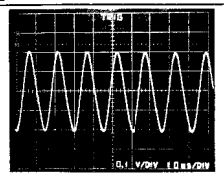


❶ LCHO



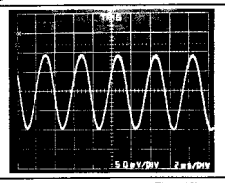
- U. Poly ..... French Horn
- Harmonic Control ..... Normal
- Upper Key C4
- Poly Vol, Main Vol ..... Max.
- Expression ..... Max.

❷ WHO



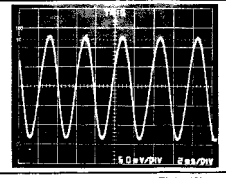
- Bass ..... Bass 16'
- Pedal Key C2
- Bass Vol, Main Vol ..... Max.
- Expression ..... Max.

❸ RCHO



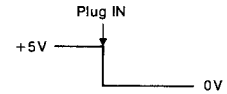
- Upper Tab ..... Flute 16'
- Upper Key C4
- Tab Vol, Main Vol ..... Max.
- Expression ..... Max.

❹ SSPO



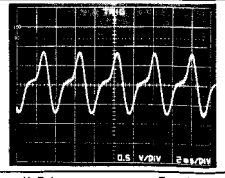
- Upper Tab ..... Flute 16'
- Upper Key C4
- Tab Vol, Main Vol ..... Max.
- Expression ..... Max.

❺ HP IN



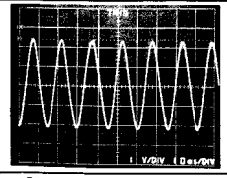
- HP Plug ..... IN

❻ SPL



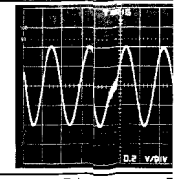
- U. Poly ..... French Horn
- Harmonic Control ..... Normal
- Upper Key C4
- Poly Vol, Main Vol ..... Max.
- Expression ..... Max.

❼ WF



- Bass ..... Bass 16'
- Pedal Key C2
- Bass Vol, Main Vol ..... Max.
- Expression ..... Max.

❽ SSP



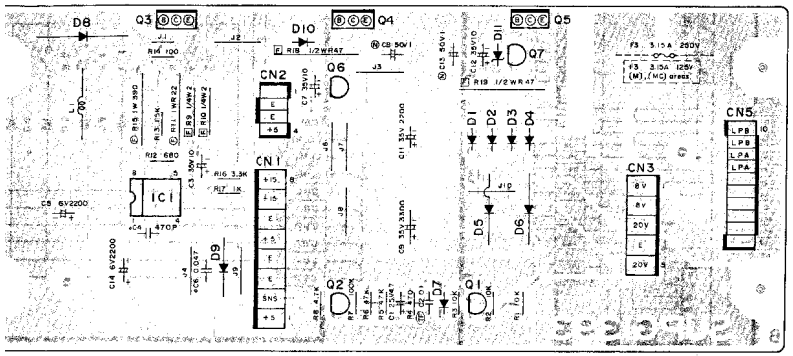
- Upper Tab ..... F
- Upper Key C
- Tab Vol, Main Vol ..... M
- Expression ..... M

6 7 8 9 10 11 12 13 14

S POWER SUPPLY CIRCUIT BOARD

• Products for [M] [MC] areas **SXPG139351**

• Except for [M] [MC] areas **SXPG139341**



PS

NOTES:

• IC'S

IC1:	SVIGM5291P

• TRANSISTORS

Q1, 2:	2SC2320LFG
Q3:	2SB953AQP
Q4:	2SD1277A
Q5:	2SB951A
Q6, 7:	2SJ105GR

• DIODES

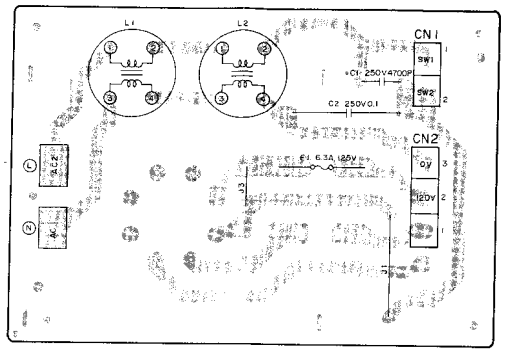
D1~4:	SVDGERA1502Y
D5, 6:	SVDS2V20
D7:	MA165TA5
D8:	SVDGERC9102
D9:	MA2062LF
D10, 11:	MA4160

• FUSES

F3 M MC:	XBA1C31N1U100
F5:	XBA2C31TB0

ACP AC POWER SUPPLY CIRCUIT BOARD

• Products for [M] [MC] areas **SXPG140921**

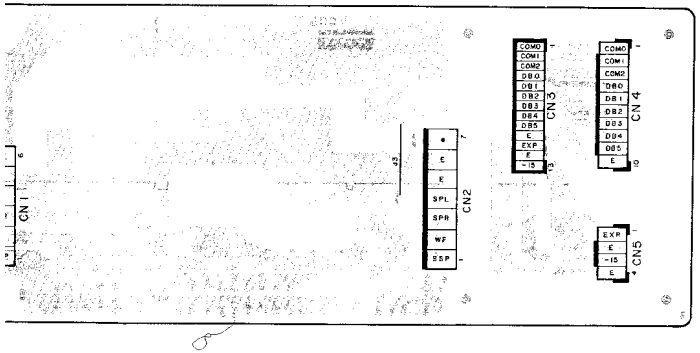


NOTE: • FUSE

F1: XBA1C63NU100

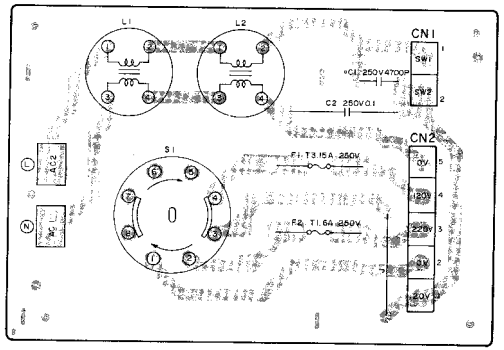
W NETWORK CIRCUIT BOARD

SXPG140511E



ACP AC POWER SUPPLY CIRCUIT BOARD

• Products for [EK] [XS] [XL] [XR] [X] areas **SXPG140931**



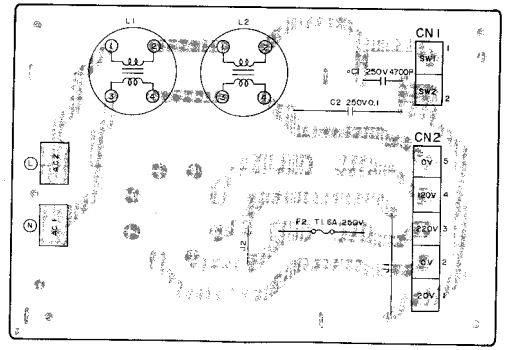
NOTES:

• FUSES

F1:	XBA2C31TB0
F2:	XBA2C16TB0

ACP AC POWER SUPPLY CIRCUIT BOARD

• Products for European areas **SXPG140911**

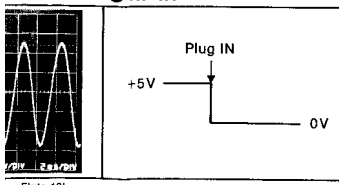


NOTE:

• FUSE

F2: XBA2C16TB0

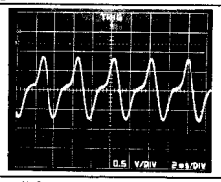
❺ HP IN



.....Flute 16'
.....C4
.....Max.
.....Max.

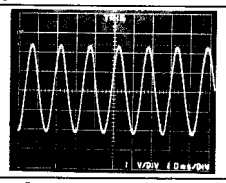
• HP Plug.....IN

❻ SPL



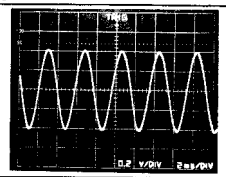
• U. Poly .....French Horn
• Harmonic Control.....Normal
• Upper Key.....C4
• Poly Vol, Main Vol.....Max.
• Expression .....Max.

❼ WF



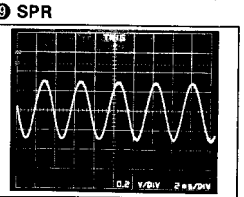
• Bass .....Bass 16'
• Pedal Key C2
• Bass Vol, Main Vol .....Max.
• Expression .....Max.

❽ SSP



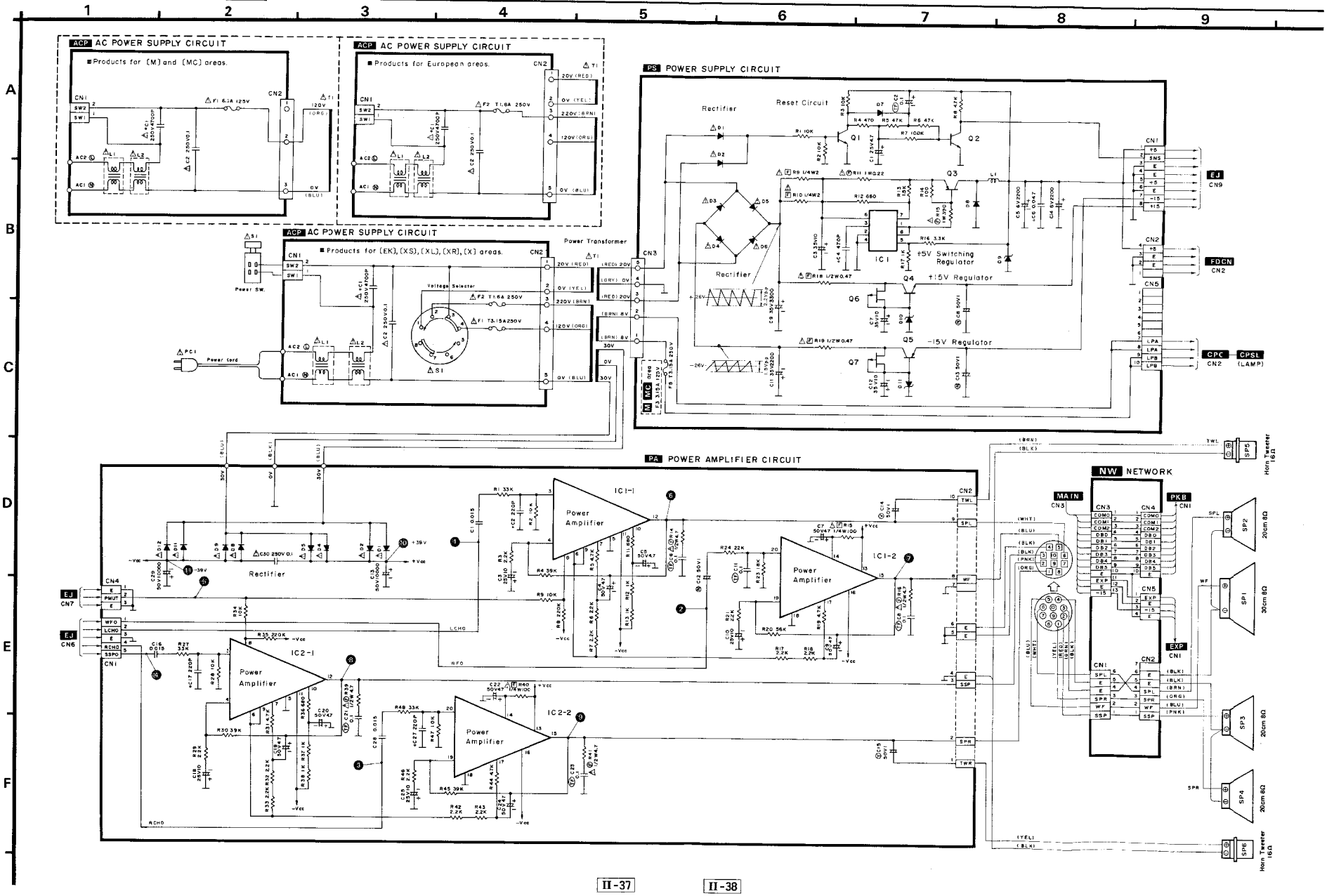
• Upper Tab.....Flute 16'
• Upper Key.....C4
• Tab Vol, Main Vol.....Max.
• Expression .....Max.

❾ SPR



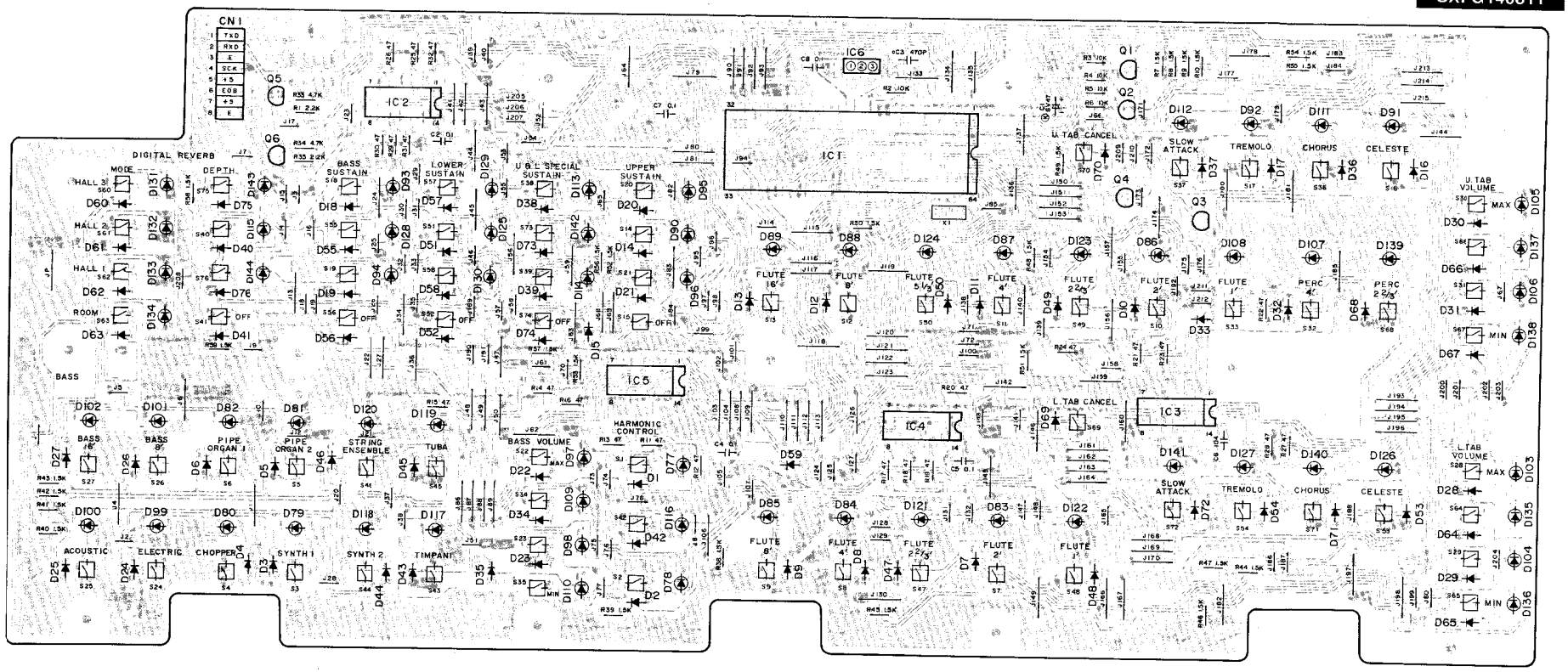
• Upper Tab.....Flute 16'
• Upper Key.....C4
• Tab Vol, Main Vol.....Max.
• Expression .....Max.

ACP PS PA NW AC POWER SUPPLY, POWER SUPPLY, POWER AMPLIFIER, NETWORK CIRCUIT DIAGRAM



CPL UPPER CONTROL PANEL LEFT CIRCUIT BOARD

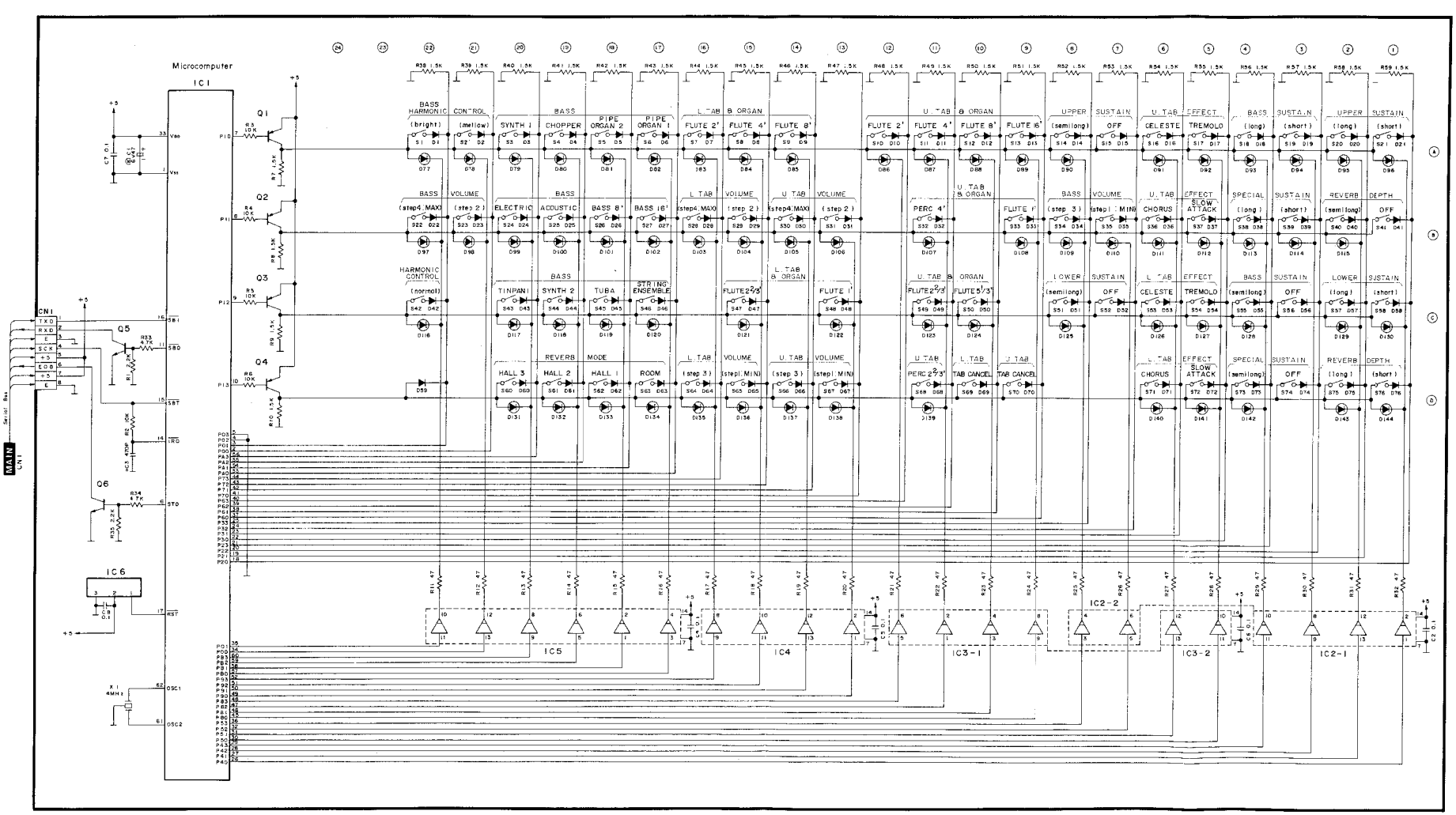
SXPG140811

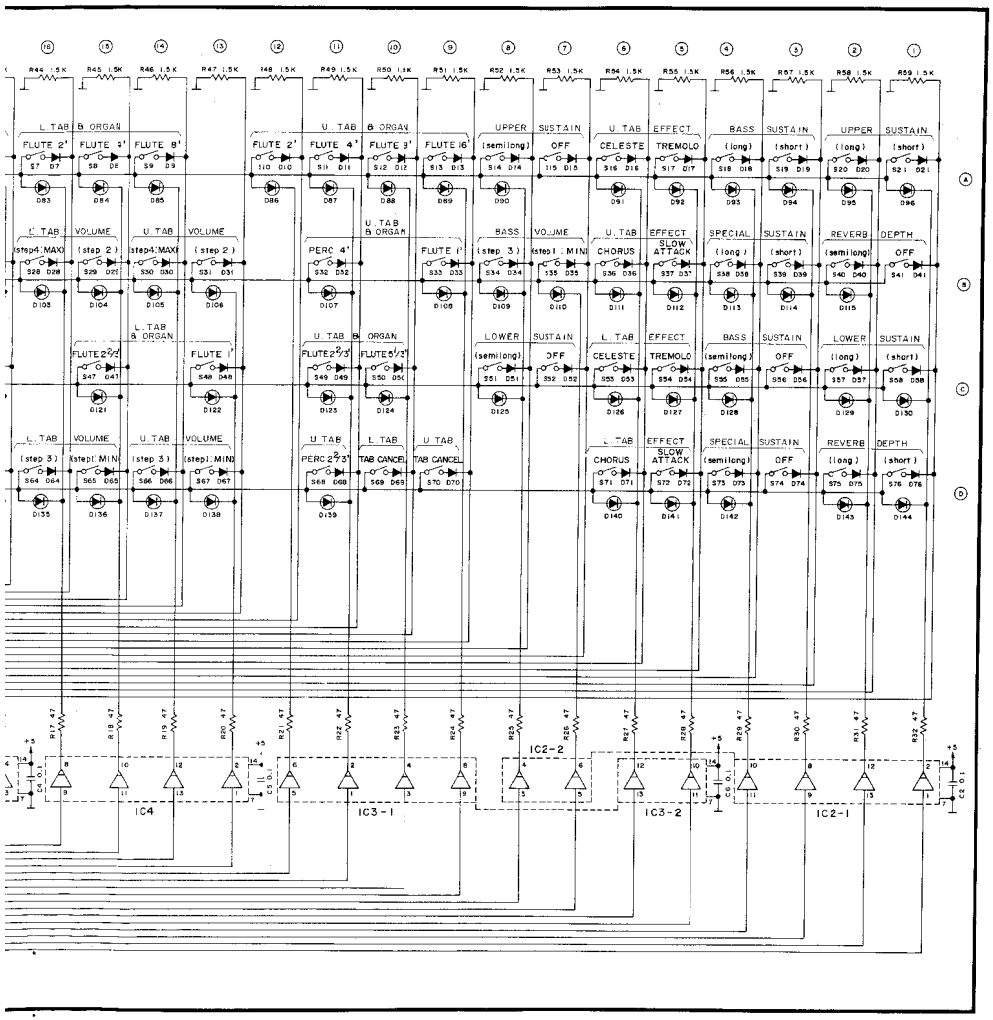


NOTES:

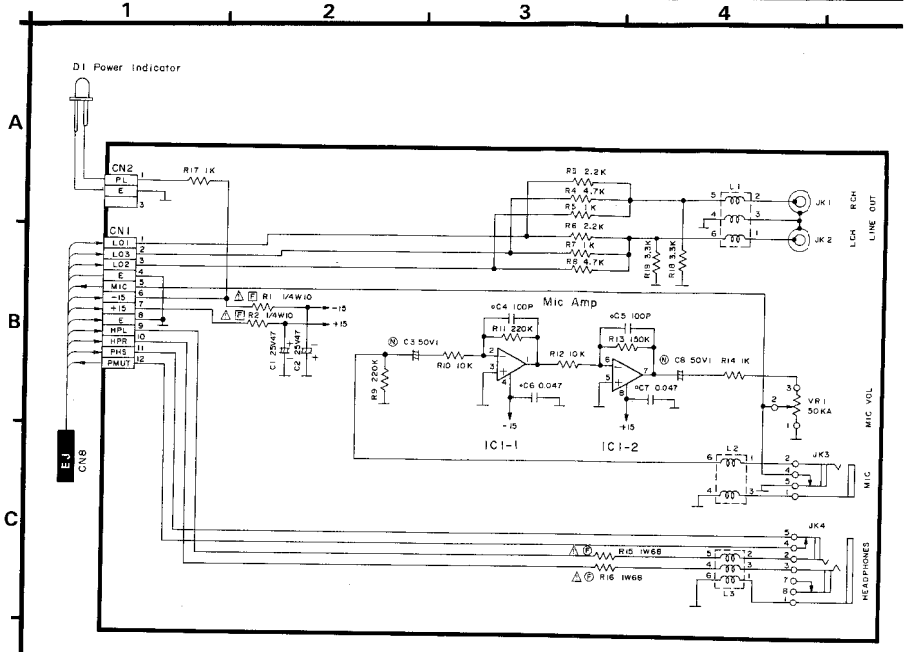
- IC'S
  - IC1: MN15524PGY
  - IC2~5: SVIGM74LS07
  - IC6: MN1280R
- TRANSISTORS
  - Q1~4: 2SA830SB
  - Q5: 2SC1047C
  - Q6: 2SC2320LFG
- DIODES
  - D1~76: MA165TA5
  - D77~144: SVDGSEL4117R

UPPER CONTROL PANEL LEFT CIRCUIT DIAGRAM

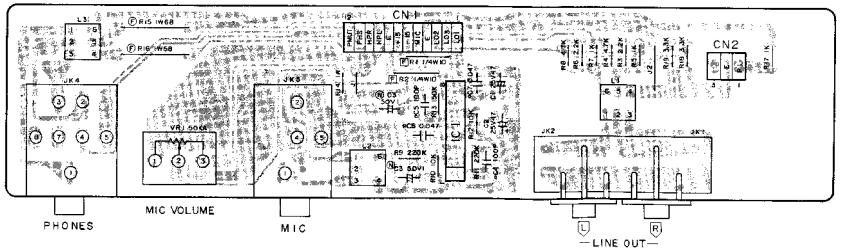




JACK CIRCUIT



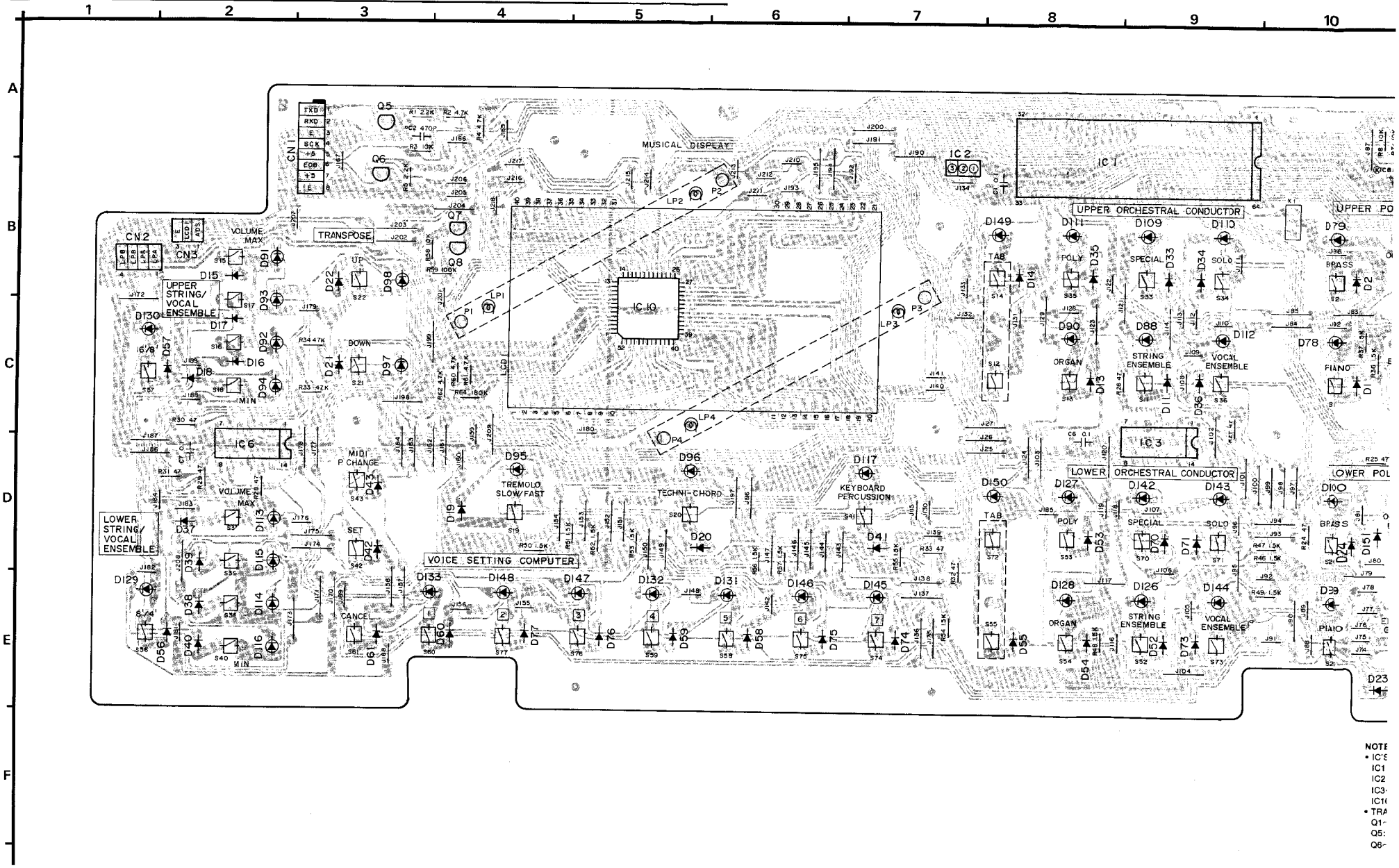
SXPG140511B



NOTES:

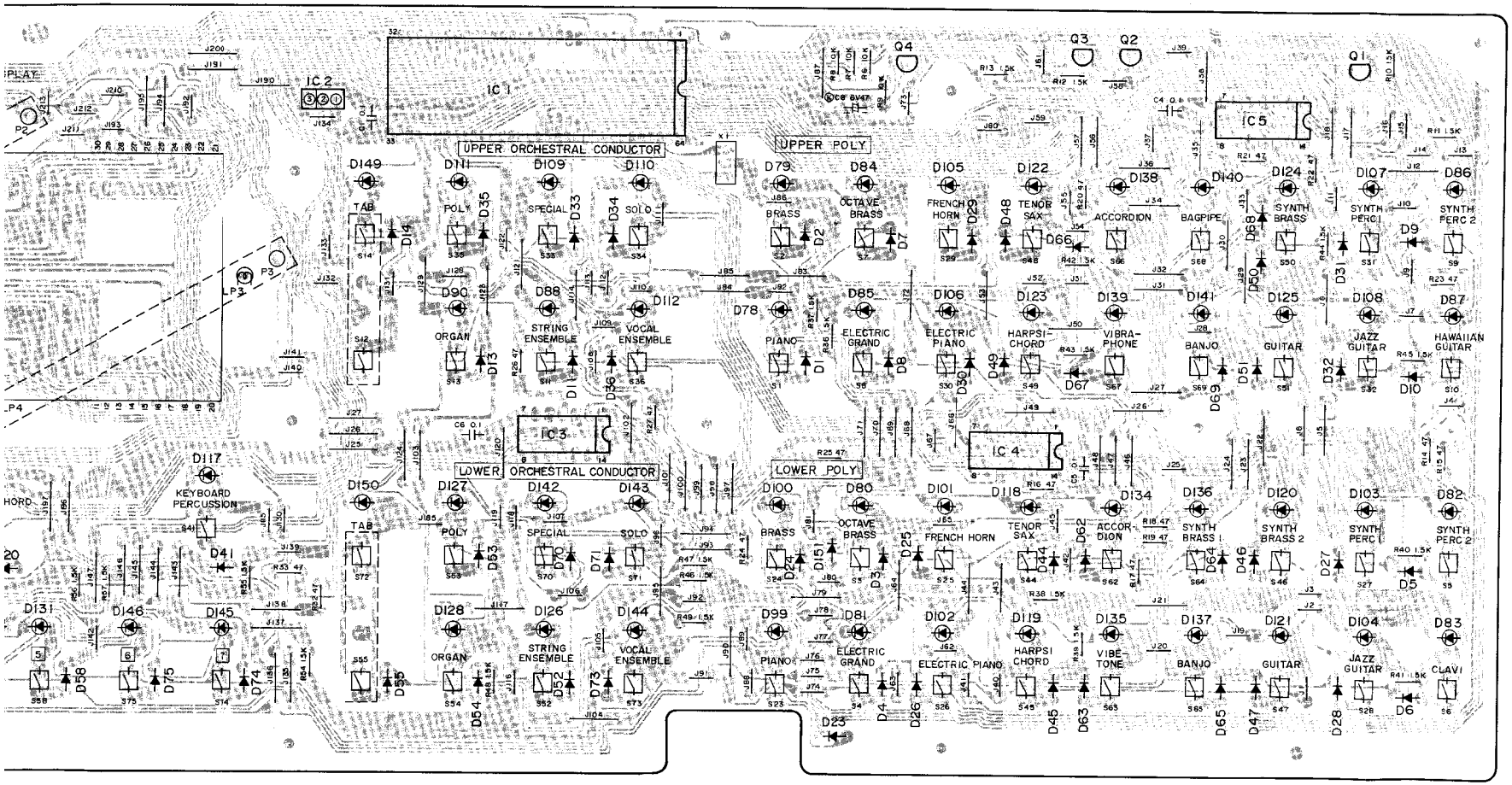
- IC
  IC1: SVIGM5218L

CPC UPPER CONTROL PANEL CENTER CIRCUIT BOARD



NOTE
• IC'S
IC1
IC2
IC3
IC1(
• TRA
Q1-
Q5:
Q6-

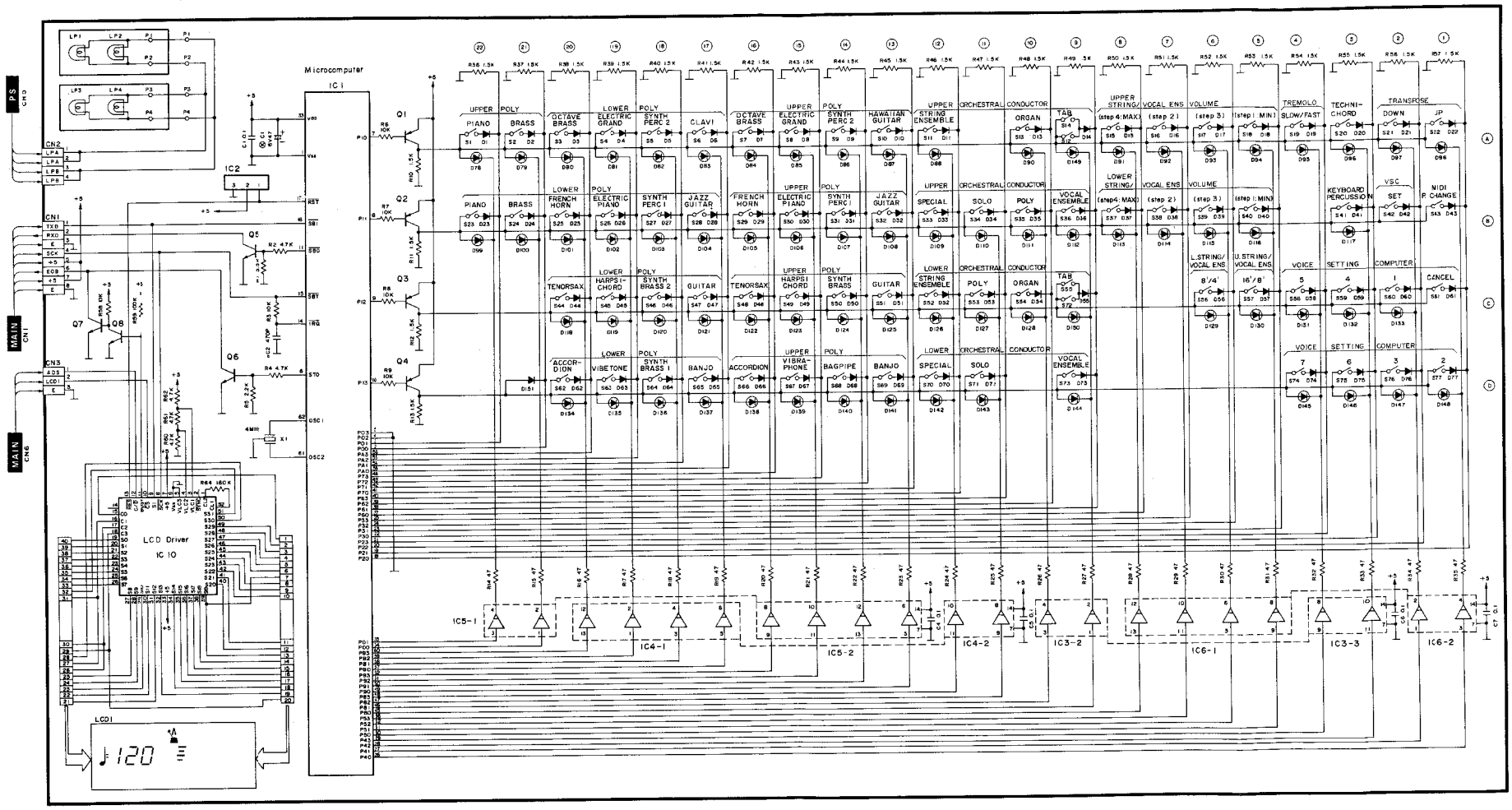
SXPG140711



NOTES:

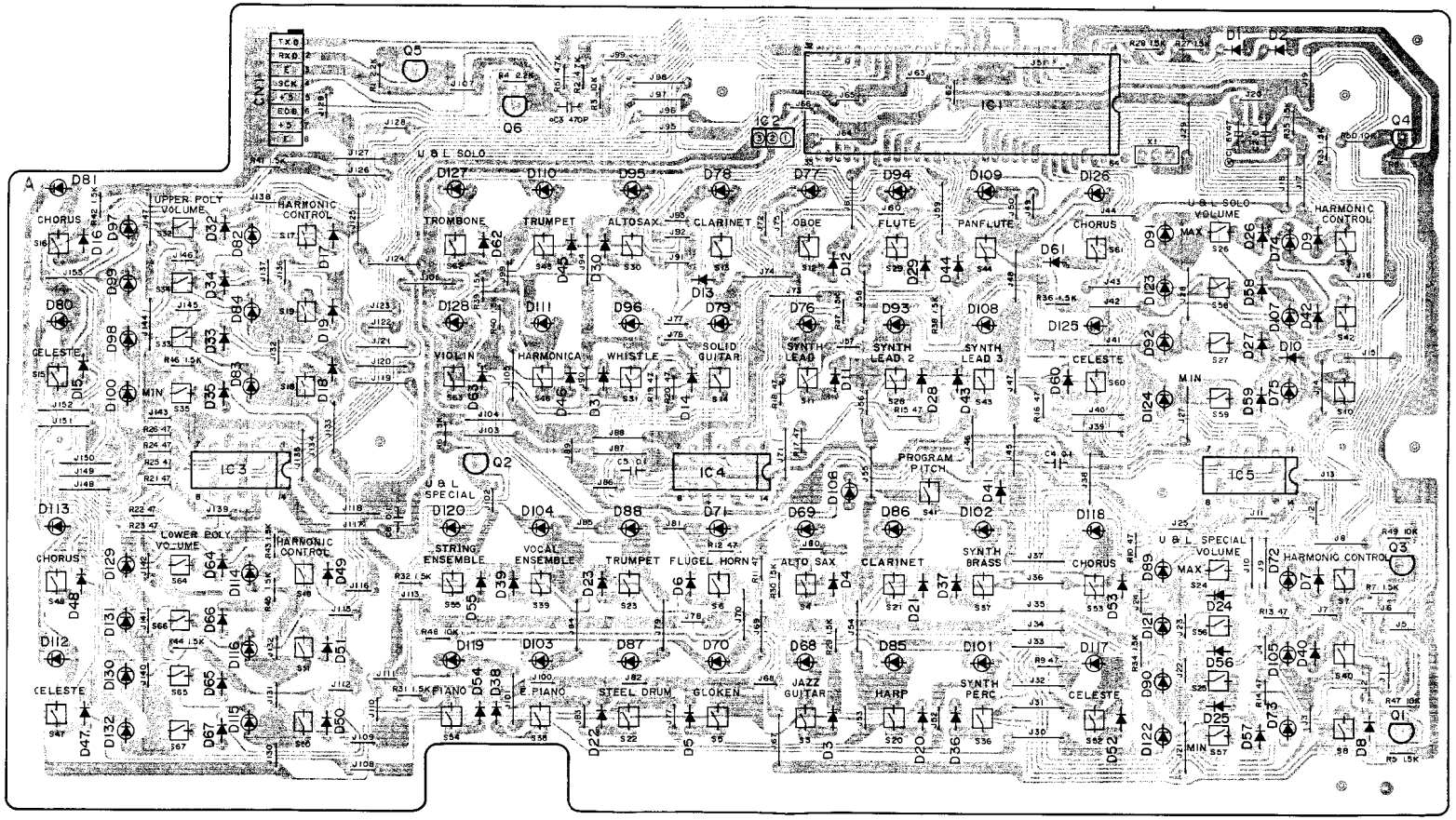
- IC'S
  - IC1: MN15524PGY
  - IC2: MN1280R
  - IC3~6: SVIGM74LS07
  - IC10: SVIGUPD7225
- TRANSISTORS
  - Q1~4: 2SA830SB
  - Q5: 2SC1047C
  - Q6~8: 2SC2320LFG
- DIODES
  - D1~11, 13~71, 73~77, 151: MA165TA5
  - D78~88, 90~130, 134~144: SVDGSEL4117R
  - D131~133, 145~148: SVDGSEL4417G
  - D149, 150: SVDGSEL4117R

CPC UPPER CONTROL PANEL CENTER CIRCUIT DIAGRAM



CPR UPPER CONTROL PANEL RIGHT CIRCUIT BOARD

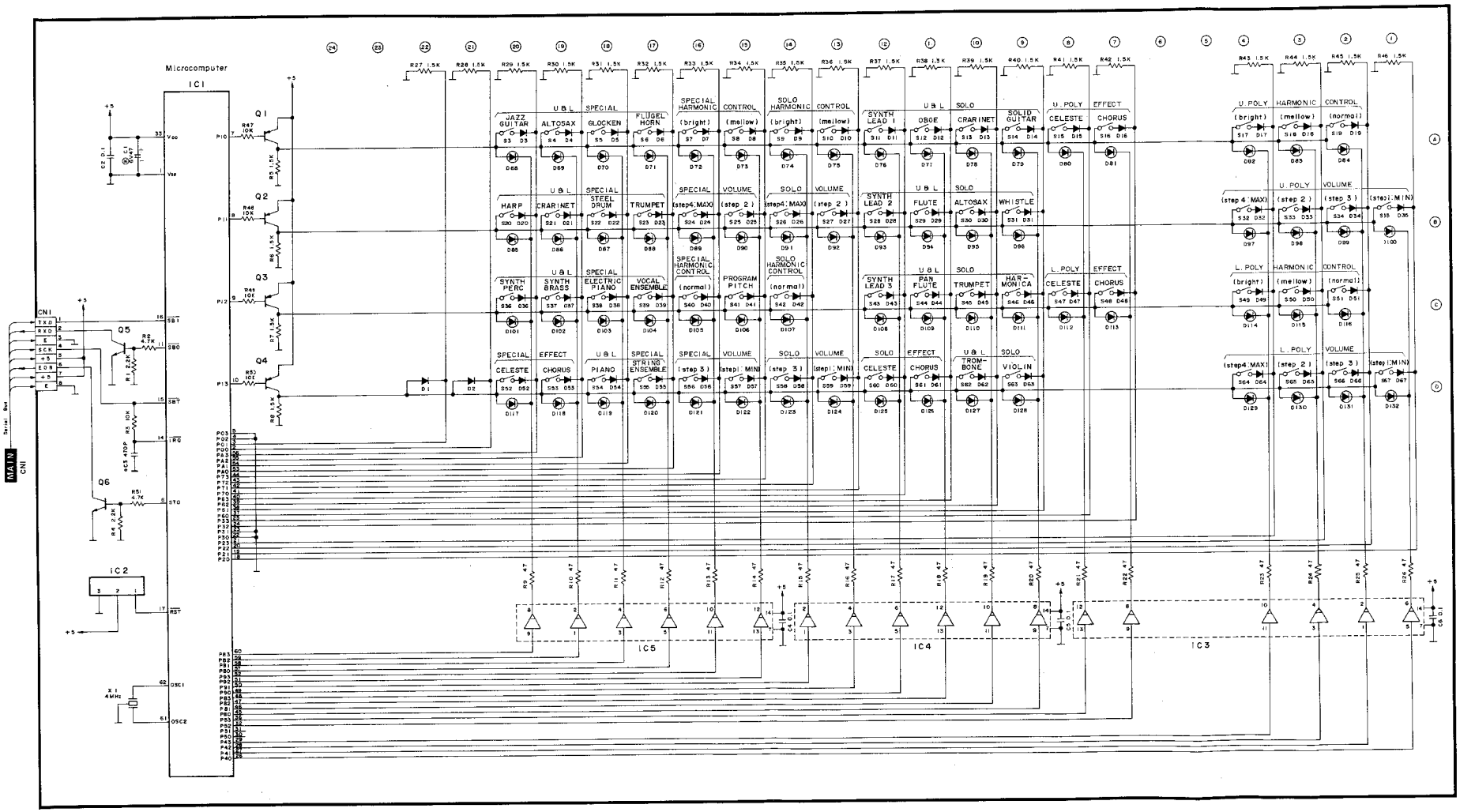
SXPG140611



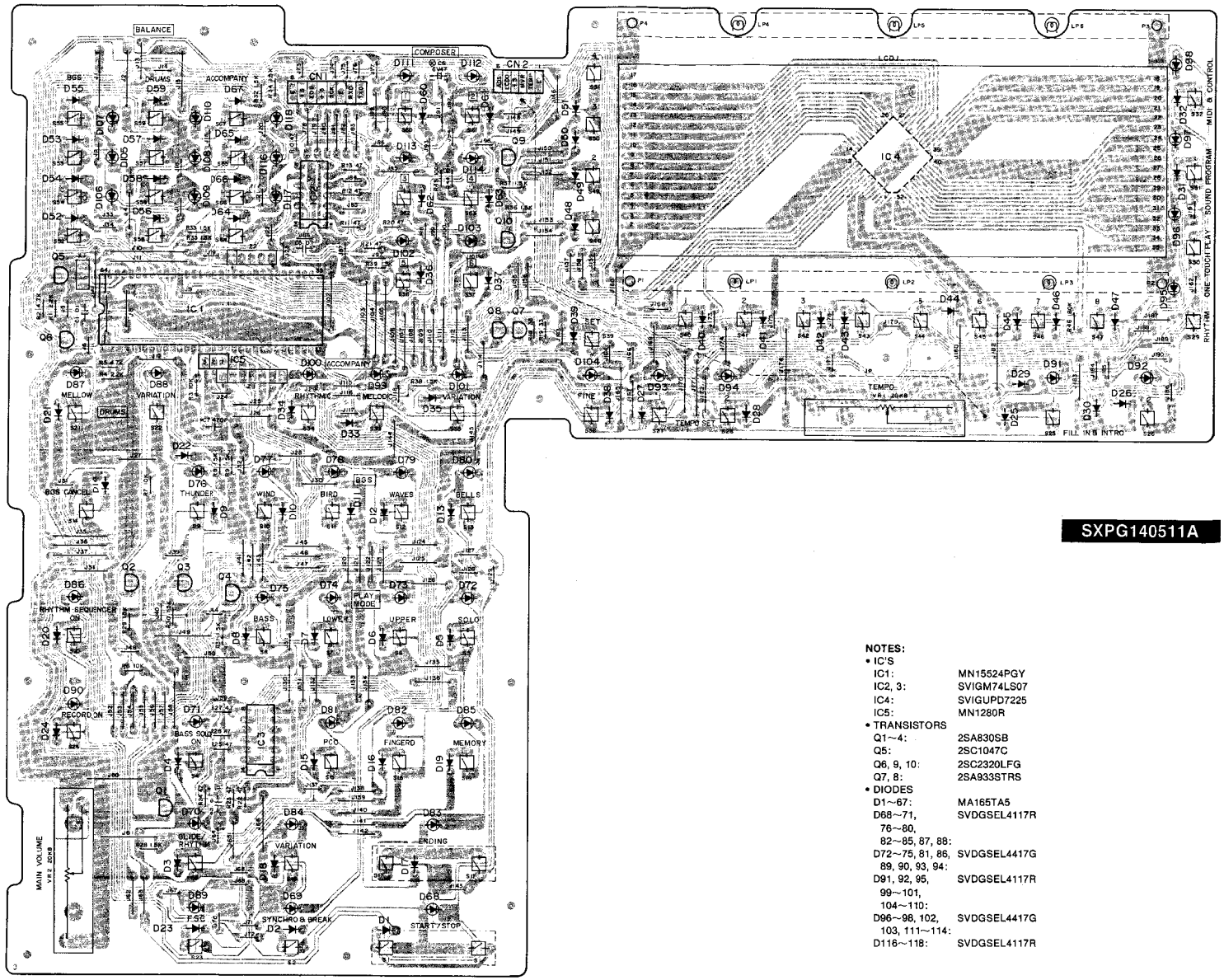
NOTES:

- IC'S
  - IC1: MN15524PGY
  - IC2: MN1280R
  - IC3~5: SVIGM74LS07
- TRANSISTORS
  - Q1~4: 2SA830SB
  - Q5: 2SC1047C
  - Q6: 2SC2320LFG
- DIODES
  - D1~67: MA165TA5
  - D68~105, 107~132: SVDGSEL4117R
  - D106: SVDGSEL4417G

CPR UPPER CONTROL PANEL RIGHT CIRCUIT DIAGRAM



CPSL LOWER CONTROL PANEL LEFT CIRCUIT BOARD

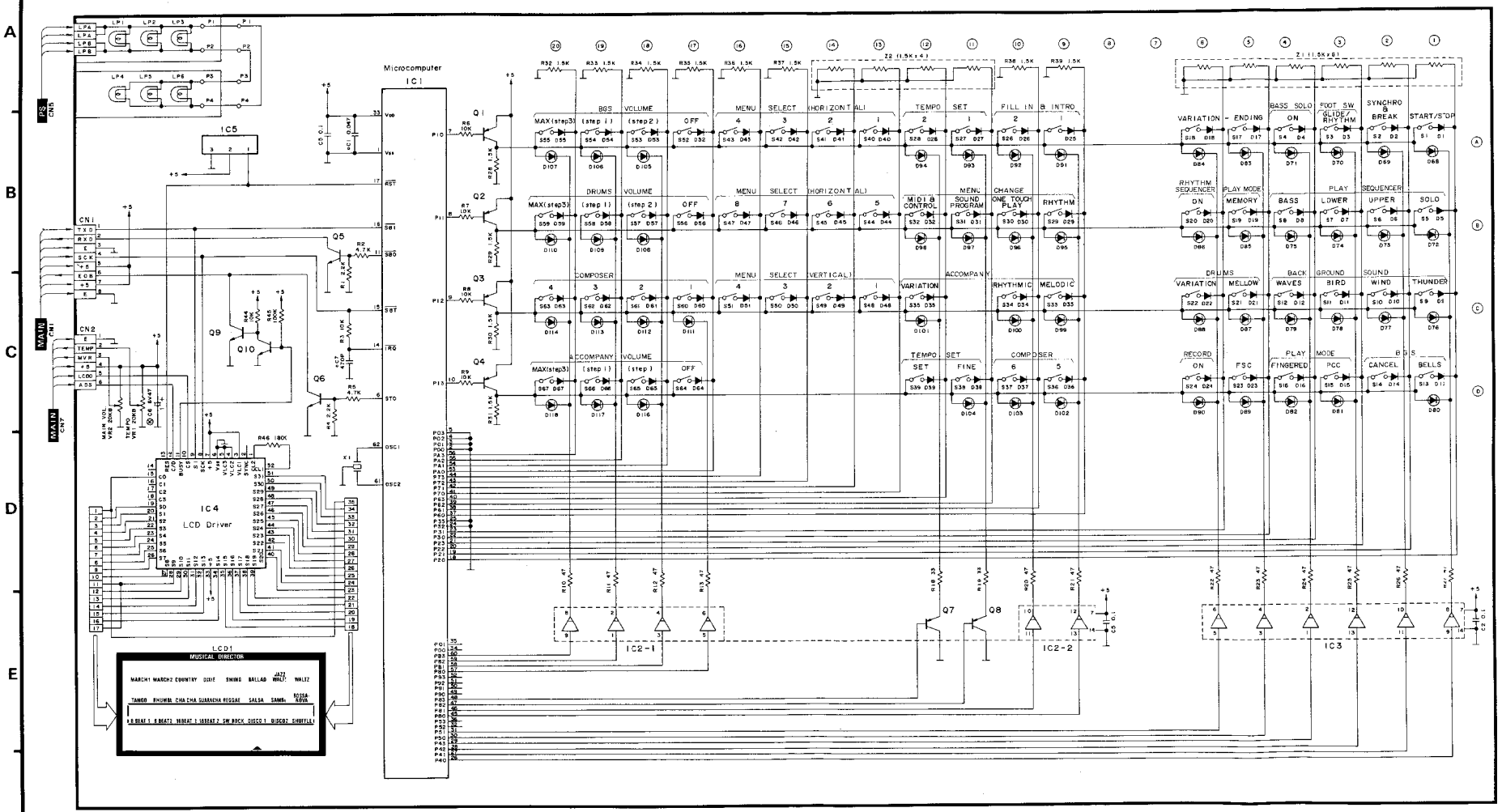


SXPG140511A

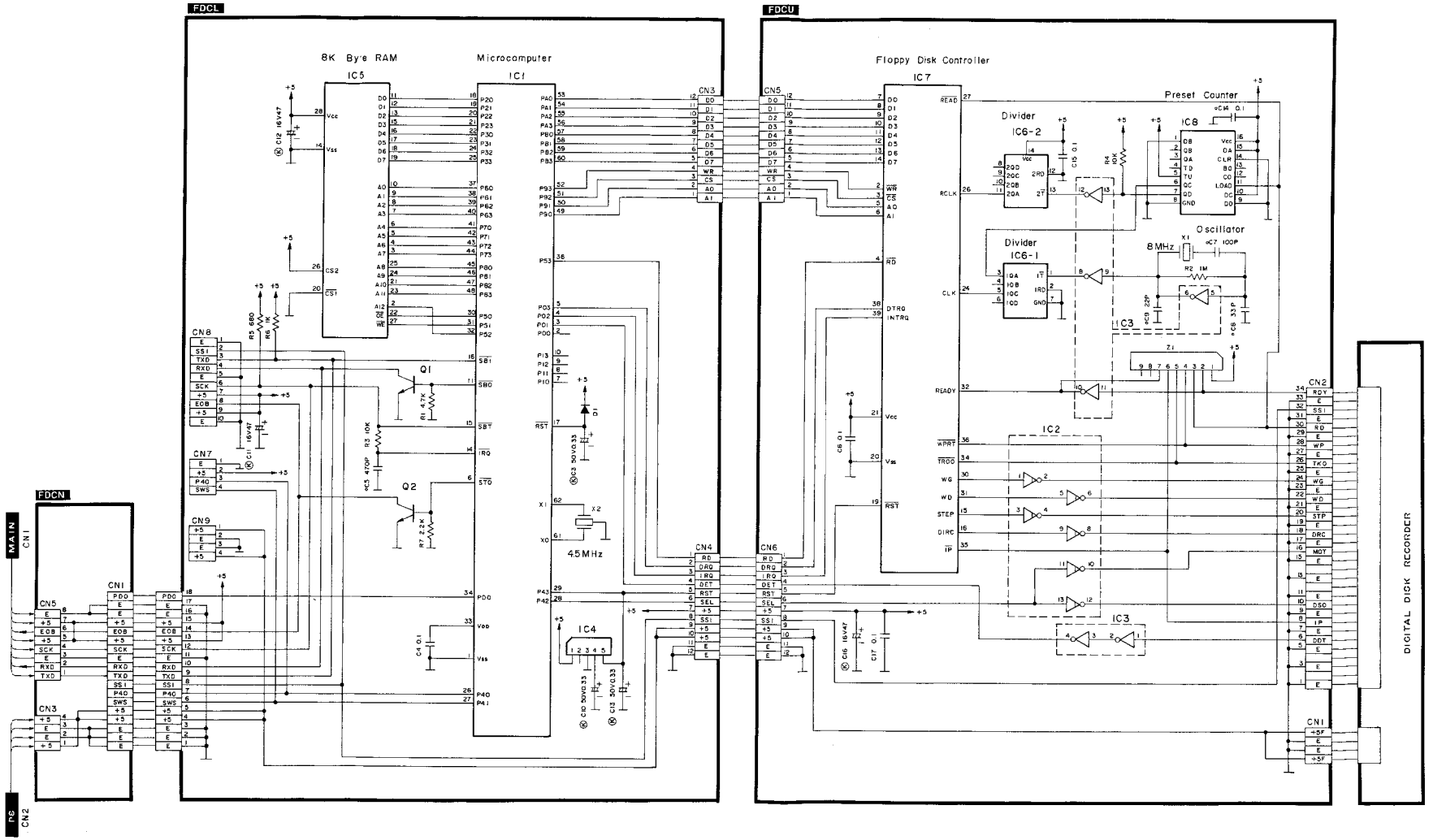
NOTES:

- IC'S
  - IC1: MN15524PGY
  - IC2, 3: SVIGM74LS07
  - IC4: SVIGUPD7225
  - IC5: MN1280R
- TRANSISTORS
  - Q1~4: 2SA830SB
  - Q5: 2SC1047C
  - Q6, 9, 10: 2SC2320LFG
  - Q7, 8: 2SA933STRS
- DIODES
  - D1~67: MA165TA5
  - D68~71, 76~80, 82~85, 87, 88: SVDGSEL4117R
  - D72~75, 81, 86, 89, 90, 93, 94: SVDGSEL4417G
  - D91, 92, 95, 99~101, 104~110: SVDGSEL4117R
  - D96~98, 102, 103, 111~114: SVDGSEL4417G
  - D116~118: SVDGSEL4117R

LOWER CONTROL PANEL LEFT CIRCUIT DIAGRAM



FD CONTROL UPPER, FD CONTROL LOWER, FD CONNECTOR CIRCUIT DIAGRAM



FDCL

NOTES:

- IC'S
  - IC1: MN15621PGL
  - IC4: SVIGM51953A
  - IC5: SVIGD4364X15
- TRANSISTORS
  - Q1: 2SC1047C
  - Q2: 2SC2320LFG
- DIODES
  - D1: MA165TA5

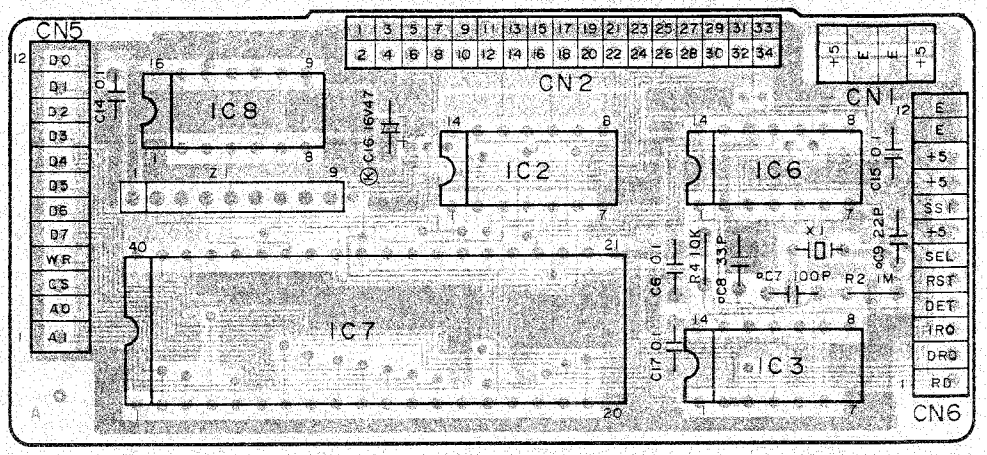
FDCU

NOTES:

- IC'S
  - IC2: SVIGM74LS05
  - IC3: SVIGTC40H004
  - IC6: SVIGM74LS393
  - IC7: SVIGM5W17930
  - IC8: SVIGM74LS193

FDCU FD CONTROL UPPER P.C.B.

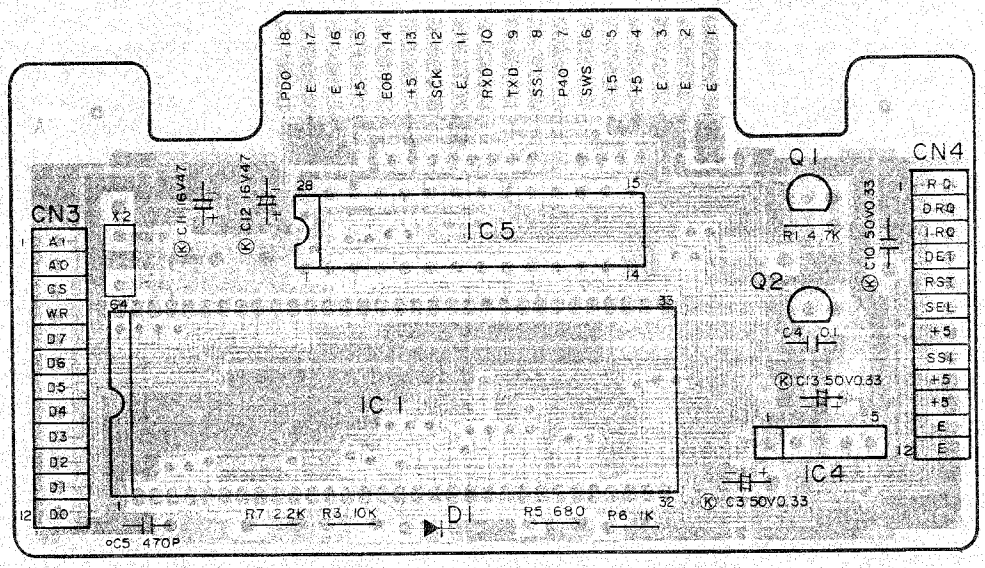
SXPG141211B



Circuit view on top of P.C.B.

FDCL FD CONTROL LOWER P.C.B.

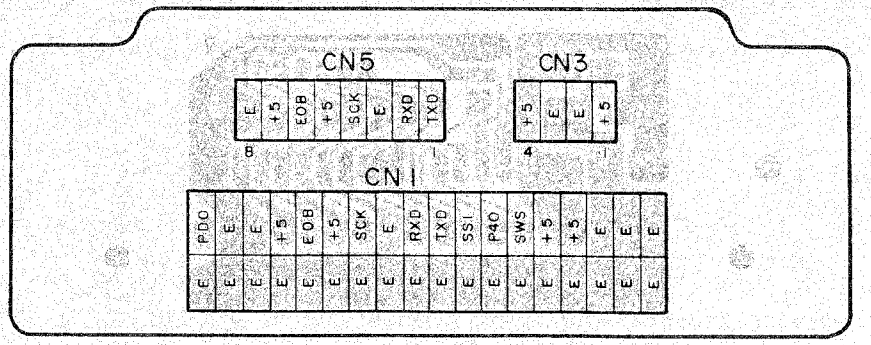
SXPG141211A



Circuit view on top of P.C.B.

FDCN FD CONNECTOR P.C.B.

SXPG141911



REPLACEMENT PARTS LIST.....P.C.B. and Wiring Parts

Notes:

1. Printed circuit board assembly with mark (NLA) is no longer available after production discontinuation of the complete set.
2. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. The "S" mark is service standard parts and may differ from production parts.
4. ○ mark are new parts.
5. For part No. with area mark, check the area when placing an order.

■ PRINTED CIRCUIT BOARD

	NLA	Area	Part No.	Description	Per/Set
○	NLA	M MC EZ	SXPG140241	MAIN	1
○	NLA		SXPG140211	MAIN Other areas	1
○	NLA		SXPG140311	SG	1
○	NLA	M MC EZ	SXPG140431	EJ	1
○	NLA		SXPG140411	EJ Other areas	1
○	NLA		SXPG141811	DRV	1
○	NLA		SXPG137611	MKB1	2
○	NLA		SXPG137811	MKB3	2
○	NLA		SXPG142811	PKB	1
	NLA		SXPG103211	EXP	1
○	NLA	M MC	S0PG140921	ACP	1
○	NLA	EK XS XL XR X	S0PG140931	ACP	1
○	NLA		S0PG140911	ACP Other areas	1
○	NLA	M MC	SXPG139351	PS	1
○	NLA		SXPG139341	PS Other areas	1
○	NLA		SXPG139231	PA	1
○	NLA		SXPG140511E	NW	1
○	NLA		SXPG140811	CPL	1
○	NLA		SXPG140511B	JACK	1
○	NLA		SXPG140711	CPC	1
○	NLA		SXPG140611	CPR	1
○	NLA		SXPG140511A	CPSL	1
○	NLA		SXPG141211B	FDCU	1
○	NLA		SXPG141211A	FDCL	1
○	NLA		SXPG141911	FDCN	1

MAIN MAIN CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
○ IC1, 3	SVIG7810HCW	1 chip 8 bit Microcomputer	2
IC2	SVIGM6050211	Gate Array	1
IC4	SVIGM603A114	Gate Array	1
○ IC5	SVIGAGX7AX2	1M bit EP ROM	1
IC6, 7	SVIGD446415L	16K bit SRAM	2
○ IC8	SVIG2GX7BX2	256K bit EP ROM	1
IC9	SVIGD446C25	16K bit SRAM	1
IC10	SVIGPC900	Photo Coupler	1
IC11	SVIGM74LS07	Hex Buffers (O.C.)	1
IC12	SVIGM74LS05	Hex Inverters (O.C.)	1
○ IC13	SVIGU3C04158	4M bit Mask ROM	1
IC14, 26, 39, 51	MN6635	Digital Sound Processor	4
IC15, 27, 40, 52	SVIGBA9221	12 bit D-A Converter	4
IC16, 28, 41, 53	SVIGM5238L	Operational Amplifier	4
IC17, 29, 42, 54	SVIGT74H4051	8-channel Multiplexer	4
IC18~21, 30~33, 43~46, 55~58	SVIGM74H4066	Quad Bilateral Switches	16
IC37, 62~64, 66~68	SVIGM5218L	Operational Amplifier	7
○ IC38 IC1	SVIGU3C04161	4M bit Mask ROM	1
○ IC38 IC2	SVIGU3C04162	4M bit Mask ROM	1
IC65	MN40174B	D-type Flip-Flop (Latch)	1
IC69	SVIGM74HC244	3-State Buffer	1
TRANSISTORS			
S Q1	2SA1015-GR	2SA933STRS	1
S Q2, 3	2SC2320LFG	2SC1310FG	2
Q4~13	2SJ105GR	FET	10
DIODES			
D9~26, 100	MA165TA5		19
OSCILLATORS			
X1, 2	SVQG49S1500T	15MHz, Quartz Oscillator	2
X3	EF0FC4004A3	4MHz, Ceramic Oscillator	1
X4, 5	SVQG49S1600T	16MHz, Quartz Oscillator	2
COMPONENT COMBINATIONS			
Z1~4, 9	EXBP88472JM	4.7KΩ×8	5
Z5~8	EXKS14Z2073	1KΩ/2KΩ, Ladder Network	4
COILS			
L2~4, 6	SLQG15W34DPQ	Coil M MC EZ	4
L5	SLQG10W10DIP	Coil M MC EZ	1
JACKS			
JK1~3	SJSG1370A	MIDI (IN, OUT, THRU)	3
RESISTORS			
R2	ERDS2TJ102	1KΩ	1
R4	ERDS2TJ472	4.7KΩ	1
R7	ERDS2TJ333	33KΩ	1
R8	ERDS2TJ472	4.7KΩ	1
R9	ERDS2TJ330	33Ω	1
R10	ERDS2TJ331	330Ω	1
R11	ERDS2TJ681	680Ω	1
R12	ERDS2TJ102	1KΩ	1
R13	ERDS2TJ332	3.3KΩ	1
R14~17	ERDS2TJ472	4.7KΩ	4
R18	ERDS2TJ105	1MΩ	1
R19, 20	ERDS2TJ472	4.7KΩ	2
R21, 22	ERDS2TJ101	100Ω	2
R23	ERDS2TJ221	220Ω	1
R24	ERDS2TJ103	10KΩ	1
R25	ERDS2TJ334	330KΩ	1
R26, 27	ERDS2TJ101	100Ω	2
R28	ERDS2TJ221	220Ω	1

Ref. No.	Part No.	Description	Per/Set
R29	ERDS2TJ103	10KΩ	1
R30	ERDS2TJ334	330KΩ	1
R31	ERDS2TJ221	220Ω	1
R32	ERDS2TJ331	330Ω	1
R33	ERDS2TJ330	33Ω	1
R37	ERDS2TJ184	180KΩ	1
R40	ERDS2TJ473	47KΩ	1
R41	ERDS2TJ222	2.2KΩ	1
R42	ERDS2TJ103	10KΩ	1
R43	ERDS2TJ222	2.2KΩ	1
R44~46	ERDS2TJ471	470Ω	3
R47	ERDS2TJ333	33KΩ	1
R48	ERDS2TJ183	18KΩ	1
R49, 50	ER0S2CKF4700	470Ω, ±1%	2
R51	ERDS2TJ151	150Ω	1
R52, 53	ERDS2TJ331	330Ω	2
R54	ERDS2TJ473	47KΩ	1
R55	ERDS2TJ151	150Ω	1
R56, 57	ERDS2TJ331	330Ω	2
R58	ERDS2TJ473	47KΩ	1
R59	ERDS2TJ151	150Ω	1
R60, 61	ERDS2TJ331	330Ω	2
R62	ERDS2TJ473	47KΩ	1
R63	ERDS2TJ151	150Ω	1
R64, 65	ERDS2TJ331	330Ω	2
R66	ERDS2TJ473	47KΩ	1
R67	ERDS2TJ151	150Ω	1
R68, 69	ERDS2TJ331	330Ω	2
R70	ERDS2TJ473	47KΩ	1
R71	ERDS2TJ151	150Ω	1
R72, 73	ERDS2TJ331	330Ω	2
R74	ERDS2TJ473	47KΩ	1
R75	ERDS2TJ151	150Ω	1
R76, 77	ERDS2TJ331	330Ω	2
R78	ERDS2TJ473	47KΩ	1
R79	ERDS2TJ151	150Ω	1
R80, 81	ERDS2TJ331	330Ω	2
R82	ERDS2TJ473	47KΩ	1
R83, 84	ERDS2TJ471	470Ω	2
R85	ERDS2TJ123	12KΩ	1
R86, 87	ER0S2CKF4700	470Ω, ±1%	2
R88	ERDS2TJ151	150Ω	1
R89, 90	ERDS2TJ331	330Ω	2
R91	ERDS2TJ473	47KΩ	1
R92	ERDS2TJ151	150Ω	1
R93, 94	ERDS2TJ331	330Ω	2
R95	ERDS2TJ473	47KΩ	1
R96	ERDS2TJ151	150Ω	1
R97, 98	ERDS2TJ331	330Ω	2
R99	ERDS2TJ473	47KΩ	1
R100	ERDS2TJ151	150Ω	1
R101, 102	ERDS2TJ331	330Ω	2
R103	ERDS2TJ473	47KΩ	1
R104	ERDS2TJ151	150Ω	1
R105, 106	ERDS2TJ331	330Ω	2
R107	ERDS2TJ473	47KΩ	1
R108	ERDS2TJ151	150Ω	1
R109, 110	ERDS2TJ331	330Ω	2
R111	ERDS2TJ473	47KΩ	1
R112	ERDS2TJ151	150Ω	1
R113, 114	ERDS2TJ331	330Ω	2
R115	ERDS2TJ473	47KΩ	1
R116	ERDS2TJ151	150Ω	1
R117, 118	ERDS2TJ331	330Ω	2
R119~121	ERDS2TJ473	47KΩ	3
R122	ERDS2TJ103	10KΩ	1
R123, 124	ERDS2TJ472	4.7KΩ	2
R125	ERDS2TJ104	100KΩ	1

Ref. No.	Part No.	Description	Per/Set
R126	ERDS2TJ225	2.2MΩ	1
R127~136	ERDS2TJ105	1MΩ	10
R137, 138 ⚠	ERD2FCJ4R7	4.7Ω, 1/4W, Fuse Type	2
R140 ⚠	ERQ14AJ2R0	2Ω, 1/4W, Fuse Type	1
R141, 142	ERDS2TJ471	470Ω	2
R143	ERDS2TJ123	12KΩ	1
R144, 145	ER0S2CKF4700	470Ω, ±1%	2
R146	ERDS2TJ151	150Ω	1
R147, 148	ERDS2TJ331	330Ω	2
R149	ERDS2TJ473	47KΩ	1
R150	ERDS2TJ151	150Ω	1
R151, 152	ERDS2TJ331	330Ω	2
R153	ERDS2TJ473	47KΩ	1
R154	ERDS2TJ151	150Ω	1
R155, 156	ERDS2TJ331	330Ω	2
R157	ERDS2TJ473	47KΩ	1
R158	ERDS2TJ151	150Ω	1
R159, 160	ERDS2TJ331	330Ω	2
R161	ERDS2TJ473	47KΩ	1
R162	ERDS2TJ151	150Ω	1
R163, 164	ERDS2TJ331	330Ω	2
R165	ERDS2TJ473	47KΩ	1
R166	ERDS2TJ151	150Ω	1
R167, 168	ERDS2TJ331	330Ω	2
R169	ERDS2TJ473	47KΩ	1
R170	ERDS2TJ151	150Ω	1
R171, 172	ERDS2TJ331	330Ω	2
R173	ERDS2TJ473	47KΩ	1
R174	ERDS2TJ151	150Ω	1
R175, 176	ERDS2TJ331	330Ω	2
R177~179	ERDS2TJ473	47KΩ	3
R180, 181	ERDS2TJ471	470Ω	2
R182	ERDS2TJ123	12KΩ	1
R183, 184	ER0S2CKF4700	470Ω, ±1%	2
R185	ERDS2TJ151	150Ω	1
R186, 187	ERDS2TJ331	330Ω	2
R188	ERDS2TJ473	47KΩ	1
R189	ERDS2TJ151	150Ω	1
R190, 191	ERDS2TJ331	330Ω	2
R192	ERDS2TJ473	47KΩ	1
R193	ERDS2TJ151	150Ω	1
R194, 195	ERDS2TJ331	330Ω	2
R196	ERDS2TJ473	47KΩ	1
R197	ERDS2TJ151	150Ω	1
R198, 199	ERDS2TJ331	330Ω	2
R200	ERDS2TJ473	47KΩ	1
R201	ERDS2TJ151	150Ω	1
R202, 203	ERDS2TJ331	330Ω	2
R204	ERDS2TJ473	47KΩ	1
R205	ERDS2TJ151	150Ω	1
R206, 207	ERDS2TJ331	330Ω	2
R208	ERDS2TJ473	47KΩ	1
R209	ERDS2TJ151	150Ω	1
R210, 211	ERDS2TJ331	330Ω	2
R212	ERDS2TJ473	47KΩ	1
R213	ERDS2TJ151	150Ω	1
R214, 215	ERDS2TJ331	330Ω	2
R216, 217	ERDS2TJ473	47KΩ	2
R218	ERDS2TJ104	100KΩ	1
R219, 220	ERDS2TJ473	47KΩ	2
R221~223	ERDS2TJ104	100KΩ	3
R224	ERDS2TJ333	33KΩ	1
R225	ERDS2TJ473	47KΩ	1
R226	ERDS2TJ153	15KΩ	1
R227~229	ERDS2TJ104	100KΩ	3
R230	ERDS2TJ333	33KΩ	1
R231	ERDS2TJ473	47KΩ	1
R232	ERDS2TJ153	15KΩ	1

Ref. No.	Part No.	Description	Per/Set
R233~235	ERDS2TJ104	100KΩ	3
R236	ERDS2TJ333	33KΩ	1
R237	ERDS2TJ473	47KΩ	1
R238	ERDS2TJ153	15KΩ	1
R239~241	ERDS2TJ104	100KΩ	3
R242	ERDS2TJ333	33KΩ	1
R243	ERDS2TJ473	47KΩ	1
R244	ERDS2TJ153	15KΩ	1
R245~247	ERDS2TJ104	100KΩ	3
R248	ERDS2TJ333	33KΩ	1
R249	ERDS2TJ473	47KΩ	1
R250	ERDS2TJ153	15KΩ	1
R251, 252	ERDS2TJ473	47KΩ	2
R254	ERDS2TJ471	470Ω	1
R255	ERDS2TJ333	33KΩ	1
R256, 257	ERDS2TJ472	4.7KΩ	2
CAPACITORS			
C1	ECQG1H102KZ	0.001μF	1
C2	ECCR1H221J	220pF	1
C3~5	ECKR1E473ZV	0.047μF	3
C6	ECEA0JU331	330μF, 6.3V	1
C7	ECKR1E473ZV	0.047μF	1
C8	ECEA0JU331	330μF, 6.3V	1
C10	ECKR1E473ZV	0.047μF	1
C11~14	ECCR1H220J	22pF	4
C15	ECEA1HU010	1μF, 50V	1
C16, 17	ECKR1E473ZV	0.047μF	2
C18	ECQV1H104JZ	0.1μF	1
○ C20	AC2061G473Z5	0.047F, 5.5V, Memory Back-up	1
C22~24	ECKR1E473ZV	0.047μF	3
C25, 26	ECCR1H220J	22pF	2
C27	ECEA0JU101	100μF, 6.3V	1
C28	ECEA0JU470	47μF, 6.3V	1
C29	ECCR1H221J	220pF	1
C30	ECKR1E473ZV	0.047μF	1
C31	ECQG1H472KZ	0.0047μF	1
C32	ECQG1H102KZ	0.001μF	1
C33	ECQG1H472KZ	0.0047μF	1
C34	ECQG1H102KZ	0.001μF	1
C35	ECQG1H472KZ	0.0047μF	1
C36	ECQG1H102KZ	0.001μF	1
C37	ECQG1H472KZ	0.0047μF	1
C38	ECQG1H102KZ	0.001μF	1
C39	ECQG1H472KZ	0.0047μF	1
C40	ECQG1H102KZ	0.001μF	1
C41	ECQG1H472KZ	0.0047μF	1
C42	ECQG1H102KZ	0.001μF	1
C43	ECQG1H472KZ	0.0047μF	1
C44	ECQG1H102KZ	0.001μF	1
C45	ECQG1H472KZ	0.0047μF	1
C46	ECQG1H102KZ	0.001μF	1
C48	ECCR1H471J	470pF	1
C49	ECQV1H104JZ	0.1μF	1
C50, 51	ECKR1E473ZV	0.047μF	2
C52	ECCR1H221J	220pF	1
C53	ECKR1E473ZV	0.047μF	1
C54	ECEA0JU101	100μF, 6.3V	1
C55	ECEA0JU470	47μF, 6.3V	1
C56, 57	ECKR1E473ZV	0.047μF	2
C58	ECQG1H472KZ	0.0047μF	1
C59	ECQG1H102KZ	0.001μF	1
C60	ECQG1H472KZ	0.0047μF	1
C61	ECQG1H102KZ	0.001μF	1
C62	ECQG1H472KZ	0.0047μF	1
C63	ECQG1H102KZ	0.001μF	1

Ref. No.	Part No.	Description	Per/Set
C64	ECQG1H472KZ	0.0047μF	1
C65	ECQG1H102KZ	0.001μF	1
C66	ECQG1H472KZ	0.0047μF	1
C67	ECQG1H102KZ	0.001μF	1
C68	ECQG1H472KZ	0.0047μF	1
C69	ECQG1H102KZ	0.001μF	1
C70	ECQG1H472KZ	0.0047μF	1
C71	ECQG1H102KZ	0.001μF	1
C72	ECQG1H472KZ	0.0047μF	1
C73	ECQG1H102KZ	0.001μF	1
C74	ECCR1H471J	470pF	1
C76	ECQV1H104JZ	0.1μF	1
C77	ECQG1H472KZ	0.0047μF	1
C78	ECQG1H222KZ	0.0022μF	1
C79	ECEA0JU101	100μF, 6.3V	1
C80	ECQV1H104JZ	0.1μF	1
C81, 82	ECEA1CU101	100μF, 16V	2
C83	ECEA0JU331	330μF, 6.3V	1
○ C85	ECRR1H104ZF	0.1μF	1
C86, 87	ECKR1E473ZV	0.047μF	2
C88, 89	ECCR1H220J	22pF	2
C90	ECCR1H221J	220pF	1
C91	ECEA0JU101	100μF, 6.3V	1
C92, 93	ECKR1E473ZV	0.047μF	2
C94	ECQG1H472KZ	0.0047μF	1
C95	ECQG1H102KZ	0.001μF	1
C96	ECQG1H472KZ	0.0047μF	1
C97	ECQG1H102KZ	0.001μF	1
C98	ECQG1H472KZ	0.0047μF	1
C99	ECQG1H102KZ	0.001μF	1
C100	ECQG1H472KZ	0.0047μF	1
C101	ECQG1H102KZ	0.001μF	1
C102	ECQG1H472KZ	0.0047μF	1
C103	ECQG1H102KZ	0.001μF	1
C104	ECQG1H472KZ	0.0047μF	1
C105	ECQG1H102KZ	0.001μF	1
C106	ECQG1H472KZ	0.0047μF	1
C107	ECQG1H102KZ	0.001μF	1
C108	ECQG1H472KZ	0.0047μF	1
C109	ECQG1H102KZ	0.001μF	1
C110	ECCR1H471J	470pF	1
C112	ECQV1H104JZ	0.1μF	1
○ C113	ECRR1H104ZF	0.1μF	1
C114	ECKR1E473ZV	0.047μF	1
C115	ECCR1H221J	220pF	1
C116	ECEA0JU101	100μF, 6.3V	1
C117, 118	ECKR1E473ZV	0.047μF	2
C119	ECQG1H472KZ	0.0047μF	1
C120	ECQG1H102KZ	0.001μF	1
C121	ECQG1H472KZ	0.0047μF	1
C122	ECQG1H102KZ	0.001μF	1
C123	ECQG1H472KZ	0.0047μF	1
C124	ECQG1H102KZ	0.001μF	1
C125	ECQG1H472KZ	0.0047μF	1
C126	ECQG1H102KZ	0.001μF	1
C127	ECQG1H472KZ	0.0047μF	1
C128	ECQG1H102KZ	0.001μF	1
C129	ECQG1H472KZ	0.0047μF	1
C130	ECQG1H102KZ	0.001μF	1
C131	ECQG1H472KZ	0.0047μF	1
C132	ECQG1H102KZ	0.001μF	1
C133	ECQG1H472KZ	0.0047μF	1
C134	ECQG1H102KZ	0.001μF	1
C136	ECQG1H332KZ	0.0033μF	1
C137	ECEA1HU010	1μF, 50V	1
C138, 139	ECKR1E473ZV	0.047μF	2
C140	ECQG1H332KZ	0.0033μF	1
C141	ECQG1H682KZ	0.0068μF	1

Ref. No.	Part No.	Description	Per/Set
C142, 143	ECKR1E473ZV	0.047μF	2
C144	ECQG1H152KZ	0.0015μF	1
C145	ECQG1H332KZ	0.0033μF	1
C146, 147	ECKR1E473ZV	0.047μF	2
C148	ECQG1H152KZ	0.0015μF	1
C149	ECQG1H332KZ	0.0033μF	1
C150, 151	ECKR1E473ZV	0.047μF	2
C152	ECQG1H152KZ	0.0015μF	1
C153	ECQG1H332KZ	0.0033μF	1
C154, 155	ECKR1E473ZV	0.047μF	2
C156	ECQG1H152KZ	0.0015μF	1
C157	ECQG1H332KZ	0.0033μF	1
C158	ECQV1H104JZ	0.1μF	1
C159	ECCR1H221J	220pF	1
C160, 161	ECCR1H681J	680pF	2
C200	ECQG1H332KZ	0.0033μF	1
C201~220	ECKR1E473ZV	0.047μF	20
C221, 222	ECEA0JU470	47μF, 6.3V	2
C223	ECKR1E473ZV	0.047μF	1
C225, 226	ECKR1E473ZV	0.047μF	2
C229, 230	ECEA0JU101	100μF, 6.3V	2

SG SOUND GENERATOR CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1	SVIGM74LS137	Decoder	1
○ IC2	SVIGU3C04159	4M bit Mask ROM	1
IC3, 18, 31	MN6635	Digital Sound Processor	3
IC4, 19, 32	SVIGBA9221	12 bit D-A Converter	3
IC5, 20, 33	SVIGM5238L	Operational Amplifier	3
IC6, 21, 34	SVIGT74H4051	8-channel Multiplexer	3
IC7~10, 22~25, 35~38	SVIGM74H4066	Quad Bilateral Switches	12
IC15, 43, 44	SVIGM5218L	Operational Amplifier	3
IC16	MN40174B	D-type Flip-Flop (Latch)	1
○ IC17	SVIGU3C04160	4M bit Mask ROM	1
○ IC30 IC1	SVIGU3C04163	4M bit Mask ROM	1
○ IC30 IC2	SVIGU3C04164	4M bit Mask ROM	1
TRANSISTOR			
Q1	2SC1047C		1
OSCILLATORS			
X1, 2	SVQG49S1600T	16MHz, Quartz Oscillator	2
COMPONENT COMBINATIONS			
Z1~3	EXKS14Z2073	1KΩ/2KΩ, Ladder Network	3
RESISTORS			
R1	ERDS2TJ103	10KΩ	1
R2	ERDS2TJ102	1KΩ	1
R3	ERDS2TJ472	4.7KΩ	1
R4, 5	ER0S2CKF4700	470Ω, ±1%	2
R6, 7	ERDS2TJ471	470Ω	2
R8	ERDS2TJ123	12KΩ	1
R9, 10	ER0S2CKF4700	470Ω, ±1%	2
R11, 12	ERDS2TJ471	470Ω	2
R13	ERDS2TJ123	12KΩ	1
R14, 15	ER0S2CKF4700	470Ω, ±1%	2

Ref. No.	Part No.	Description	Per/Set
R16, 17	ERDS2TJ471	470Ω	2
R18	ERDS2TJ123	12KΩ	1
R19	ERDS2TJ151	150Ω	1
R20, 21	ERDS2TJ331	330Ω	2
R22	ERDS2TJ473	47KΩ	1
R23	ERDS2TJ151	150Ω	1
R24, 25	ERDS2TJ331	330Ω	2
R26	ERDS2TJ473	47KΩ	1
R27	ERDS2TJ151	150Ω	1
R28, 29	ERDS2TJ331	330Ω	2
R30	ERDS2TJ473	47KΩ	1
R31	ERDS2TJ151	150Ω	1
R32, 33	ERDS2TJ331	330Ω	2
R34	ERDS2TJ473	47KΩ	1
R35	ERDS2TJ151	150Ω	1
R36, 37	ERDS2TJ331	330Ω	2
R38	ERDS2TJ473	47KΩ	1
R39	ERDS2TJ151	150Ω	1
R40, 41	ERDS2TJ331	330Ω	2
R42	ERDS2TJ473	47KΩ	1
R43	ERDS2TJ151	150Ω	1
R44, 45	ERDS2TJ331	330Ω	2
R46	ERDS2TJ473	47KΩ	1
R47	ERDS2TJ151	150Ω	1
R48, 49	ERDS2TJ331	330Ω	2
R50	ERDS2TJ473	47KΩ	1
R51	ERDS2TJ333	33KΩ	1
R52	ERDS2TJ151	150Ω	1
R53, 54	ERDS2TJ331	330Ω	2
R55	ERDS2TJ473	47KΩ	1
R56	ERDS2TJ151	150Ω	1
R57, 58	ERDS2TJ331	330Ω	2
R59	ERDS2TJ473	47KΩ	1
R60	ERDS2TJ151	150Ω	1
R61, 62	ERDS2TJ331	330Ω	2
R63	ERDS2TJ473	47KΩ	1
R64	ERDS2TJ151	150Ω	1
R65, 66	ERDS2TJ331	330Ω	2
R67	ERDS2TJ473	47KΩ	1
R68	ERDS2TJ151	150Ω	1
R69, 70	ERDS2TJ331	330Ω	2
R71	ERDS2TJ473	47KΩ	1
R72	ERDS2TJ151	150Ω	1
R73, 74	ERDS2TJ331	330Ω	2
R75	ERDS2TJ473	47KΩ	1
R76	ERDS2TJ151	150Ω	1
R77, 78	ERDS2TJ331	330Ω	2
R79	ERDS2TJ473	47KΩ	1
R80	ERDS2TJ151	150Ω	1
R81, 82	ERDS2TJ331	330Ω	2
R83	ERDS2TJ473	47KΩ	1
R84	ERDS2TJ333	33KΩ	1
R85	ERDS2TJ151	150Ω	1
R86, 87	ERDS2TJ331	330Ω	2
R88	ERDS2TJ473	47KΩ	1
R89	ERDS2TJ151	150Ω	1
R90, 91	ERDS2TJ331	330Ω	2
R92	ERDS2TJ473	47KΩ	1
R93	ERDS2TJ151	150Ω	1
R94, 95	ERDS2TJ331	330Ω	2
R96	ERDS2TJ473	47KΩ	1
R97	ERDS2TJ151	150Ω	1
R98, 99	ERDS2TJ331	330Ω	2
R100	ERDS2TJ473	47KΩ	1
R101	ERDS2TJ151	150Ω	1
R102, 103	ERDS2TJ331	330Ω	2
R104	ERDS2TJ473	47KΩ	1
R105	ERDS2TJ151	150Ω	1

Ref. No.	Part No.	Description	Per/Set
R106, 107	ERDS2TJ331	330Ω	2
R108	ERDS2TJ473	47KΩ	1
R109	ERDS2TJ151	150Ω	1
R110, 111	ERDS2TJ331	330Ω	2
R112	ERDS2TJ473	47KΩ	1
R113	ERDS2TJ151	150Ω	1
R114, 115	ERDS2TJ331	330Ω	2
R116	ERDS2TJ473	47KΩ	1
R117	ERDS2TJ474	470KΩ	1
R118, 119	ERDS2TJ334	330KΩ	2
R120, 121	ERDS2TJ472	4.7KΩ	2
R122, 123 ⚠	ERD2FCJ4R7	4.7Ω, 1/4W, Fuse Type	2
R124 ⚠	ERQ14AJ2R0	2Ω, 1/4W, Fuse Type	1
R125, 126	ERDS2TJ333	33KΩ	2
R127, 128	ERDS2TJ334	330KΩ	2
R130	ERDS2TJ102	1KΩ	1
CAPACITORS			
C1	ECKR1E473ZV	0.047μF	1
C2	ECCR1H101J	100pF	1
C3~7	ECKR1E473ZV	0.047μF	5
C8, 9	ECCR1H220J	22pF	2
C10, 11	ECKR1E473ZV	0.047μF	2
○ C12	ECRR1H104ZF	0.1μF	1
C13	ECKR1E473ZV	0.047μF	1
C14, 15	ECCR1H220J	22pF	2
C16	ECCR1H221J	220pF	1
C17	ECEA0JU470	47μF, 6.3V	1
C18	ECEA0JU102	1000μF, 6.3V	1
C19	ECCR1H221J	220pF	1
C20	ECEA0JU470	47μF, 6.3V	1
C21	ECEA0JU101	100μF, 6.3V	1
C22	ECCR1H221J	220pF	1
C23	ECEA0JU470	47μF, 6.3V	1
C24	ECEA0JU102	1000μF, 6.3V	1
C25, 26	ECEA1CU101	100μF, 16V	2
C27	ECEA0JU331	330μF, 6.3V	1
C29~52	ECQG1H472KZ	0.0047μF	24
C53~76	ECQG1H102KZ	0.001μF	24
C77	ECQG1H472KZ	0.0047μF	1
C79	ECQG1H472KZ	0.0047μF	1
C80	ECCR1H470J	47pF	1
C82, 83	ECCR1H471J	470pF	2
C85	ECEA0JU101	100μF, 6.3V	1
C86~101	ECKR1E473ZV	0.047μF	16
C102, 103	ECQG1H102KZ	0.001μF	2
C104, 105	ECCR1H470J	47pF	2
C106	ECQG1H102KZ	0.001μF	1

EJ EFFECT, MIXING & JACK CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1~4, 78	MN40174B	D-type Flip-Flop (Latch)	5
IC5~11, 13	SVIGTC4052BP	Dual 4-channel Maltiplexer	8
IC12	SVIGTC4053BP	2-channel Multiplexer	1
IC14~19, 22, 26~29, 38, 40, 42, 44, 46, 47, 49, 60~62, 66~77	SVIGM5218L	Operational Amplifier	33
IC20, 23, 37, 41, 43, 45	SVIGUPC1252H	VCA	6
IC21, 39	SVIGUPC1253H	RMS Level Sensor	2
IC24, 31~33, 50, 51	SVIGMSM4011	2-Input NAND Gate	6
IC25, 34~36	MN3004	BBD (512 stages)	4
IC30, 56~59	SVIGLM1894N	Dynamic Noise Reduction	5
IC52, 53	MN3006	BBD (128 stages)	2
IC54, 55	SVIGBA6110	VCA	2
IC63~65	SVIGM5241L	Dual VCA	3
TRANSISTORS			
Q1~3, 15~23, 42	2SJ105GR	FET	13
S Q4, 6~14, 28, 29, 36~39	2SC2320LFG	2SC1310FG	16
S Q5, 26, 27, 35, 40, 41	2SA1015-GR	2SA933STRS	6
Q30, 31	2SC3940ARS		2
Q32, 33	2SA1534ARS		2
DIODES			
D1~21	MA165TA5		21
D23	MA4062	Zener, 6.2V	1
D24	SVDGRK14		1
COILS			
L1~4 M MC EZ	SLQG15W34DPQ	Coil	4
JACKS			
JK1~8	SJJG400A	AUX IN, LINE OUT, SEPARATED LINE OUT	8
SWITCHES			
S1~3	SSSG2002A	Slide Switch	3
SEMI-FIXED RESISTORS			
VR2, 3	EVSG0E1B223A	22KΩ B, BBD Bias	2
RESISTORS			
R1, 2	ERDS2TJ223	22KΩ	2
R3	ERDS2TJ273	27KΩ	1
R4, 5	ERDS2TJ473	47KΩ	2
R6	ERDS2TJ472	4.7KΩ	1
R7~9	ERDS2TJ473	47KΩ	3
R10, 11	ERDS2TJ103	10KΩ	2
R12, 13	ERDS2TJ223	22KΩ	2
R14	ERDS2TJ273	27KΩ	1
R15, 16	ERDS2TJ473	47KΩ	2
R17	ERDS2TJ472	4.7KΩ	1
R18~20	ERDS2TJ473	47KΩ	3
R21	ERDS2TJ103	10KΩ	1
R22	ERDS2TJ683	68KΩ	1
R23	ERDS2TJ333	33KΩ	1
R24	ERDS2TJ223	22KΩ	1
R25	ERDS2TJ273	27KΩ	1
R26, 27	ERDS2TJ473	47KΩ	2
R28	ERDS2TJ472	4.7KΩ	1
R29~31	ERDS2TJ473	47KΩ	3
R32	ERDS2TJ103	10KΩ	1
R33, 34	ERDS2TJ223	22KΩ	2
R35	ERDS2TJ273	27KΩ	1
R36, 37	ERDS2TJ473	47KΩ	2
R38	ERDS2TJ472	4.7KΩ	1
R39~41	ERDS2TJ473	47KΩ	3
R42	ERDS2TJ103	10KΩ	1

Ref. No.	Part No.	Description	Per/Set
R43, 44	ERDS2TJ223	22KΩ	2
R45	ERDS2TJ273	27KΩ	1
R46	ERDS2TJ473	47KΩ	1
R47	ERDS2TJ223	22KΩ	1
R48	ERDS2TJ472	4.7KΩ	1
R49~51	ERDS2TJ473	47KΩ	3
R52	ERDS2TJ103	10KΩ	1
R53, 54	ERDS2TJ223	22KΩ	2
R55	ERDS2TJ273	27KΩ	1
R56	ERDS2TJ473	47KΩ	1
R57	ERDS2TJ103	10KΩ	1
R58	ERDS2TJ472	4.7KΩ	1
R59	ERDS2TJ332	3.3KΩ	1
R60	ERDS2TJ154	150KΩ	1
R61	ERDS2TJ474	470KΩ	1
R62	ERDS2TJ101	100Ω	1
R63	ERDS2TJ105	1MΩ	1
R64	ERDS2TJ100	10Ω	1
R65	ERDS2TJ105	1MΩ	1
R66	ERDS2TJ333	33KΩ	1
R67	ERDS2TJ683	68KΩ	1
R68, 69	ERDS2TJ223	22KΩ	2
R70	ERDS2TJ473	47KΩ	1
R71	ERDS2TJ105	1MΩ	1
R72	ERDS2TJ332	3.3KΩ	1
R73	ERDS2TJ472	4.7KΩ	1
R74	ERDS2TJ682	6.8KΩ	1
R75	ERDS2TJ103	10KΩ	1
R76, 77	ERDS2TJ223	22KΩ	2
R78	ERDS2TJ103	10KΩ	1
R79	ERDS2TJ683	68KΩ	1
R80	ERDS2TJ333	33KΩ	1
R81, 82	ERDS2TJ223	22KΩ	2
R83	ERDS2TJ472	4.7KΩ	1
R84	ERDS2TJ332	3.3KΩ	1
R85	ERDS2TJ154	150KΩ	1
R86, 87	ERDS2TJ332	3.3KΩ	2
R88	ERDS2TJ154	150KΩ	1
R89	ERDS2TJ104	100KΩ	1
R90	ERDS2TJ684	680KΩ	1
R91~93	ERDS2TJ333	33KΩ	3
R94	ERDS2TJ393	39KΩ	1
R95	ERDS2TJ684	680KΩ	1
R96	ERDS2TJ103	10KΩ	1
R97	ERDS2TJ153	15KΩ	1
R98	ERDS2TJ154	150KΩ	1
R99	ERDS2TJ333	33KΩ	1
R100 ⚠	ERD2FCG220	22Ω, 1/4W, Fuse Type	1
R101	ERDS2TJ683	68KΩ	1
R102~104	ERDS2TJ105	1MΩ	3
R105	ERDS2TJ473	47KΩ	1
R106	ERDS2TJ223	22KΩ	1
R107	ERDS2TJ153	15KΩ	1
R108	ERDS2TJ154	150KΩ	1
R109	ERDS2TJ823	82KΩ	1
R110	ERDS2TJ473	47KΩ	1
R111	ERDS2TJ104	100KΩ	1
R112, 113	ERDS2TJ102	1KΩ	2
R114, 115	ERDS2TJ473	47KΩ	2
R116, 117	ERDS2TJ472	4.7KΩ	2
R118, 119	ERDS2TJ331	330Ω	2
R120	ERDS2TJ681	680Ω	1
R121	ERDS2TJ331	330Ω	1
R122~124	ERDS2TJ103	10KΩ	3
R125	ERDS2TJ331	330Ω	1
R126	ERDS2TJ153	15KΩ	1
R127	ERDS2TJ104	100KΩ	1
R128	ERDS2TJ331	330Ω	1

Ref. No.	Part No.	Description	Per/Set
R129	ERDS2TJ153	15KΩ	1
R130	ERDS2TJ104	100KΩ	1
R131	ERDS2TJ331	330Ω	1
R132	ERDS2TJ153	15KΩ	1
R133	ERDS2TJ104	100KΩ	1
R134	ERDS2TJ473	47KΩ	1
R135	ERDS2TJ104	100KΩ	1
R136	ERDS2TJ102	1KΩ	1
R137	ERDS2TJ103	10KΩ	1
R138	ERDS2TJ472	4.7KΩ	1
R139	ERDS2TJ332	3.3KΩ	1
R140	ERDS2TJ154	150KΩ	1
R141	ERDS2TJ474	470KΩ	1
R142	ERDS2TJ101	100Ω	1
R143	ERDS2TJ105	1MΩ	1
R145	ERDS2TJ105	1MΩ	1
R146~148	ERDS2TJ274	270KΩ	3
R149, 150	ERDS2TJ223	22KΩ	2
R151	ERDS2TJ154	150KΩ	1
R152, 153	ERDS2TJ332	3.3KΩ	2
R154, 155	ERDS2TJ154	150KΩ	2
R156	ERDS2TJ153	15KΩ	1
R157, 158	ERDS2TJ104	100KΩ	2
R159	ERDS2TJ333	33KΩ	1
R160	ERDS2TJ103	10KΩ	1
R161	ERDS2TJ332	3.3KΩ	1
R162	ERDS2TJ472	4.7KΩ	1
R163	ERDS2TJ682	6.8KΩ	1
R164	ERDS2TJ154	150KΩ	1
R165	ERDS2TJ473	47KΩ	1
R166	ERDS2TJ332	3.3KΩ	1
R167	ERDS2TJ473	47KΩ	1
R168	ERDS2TJ332	3.3KΩ	1
R169, 170	ERDS2TJ154	150KΩ	2
R171, 172	ERDS2TJ332	3.3KΩ	2
R173, 174	ERDS2TJ154	150KΩ	2
R175	ERDS2TJ153	15KΩ	1
R176	ERDS2TJ103	10KΩ	1
R177	ERDS2TJ154	150KΩ	1
R178	ERDS2TJ153	15KΩ	1
R179	ERDS2TJ103	10KΩ	1
R180	ERDS2TJ333	33KΩ	1
R181, 182 ⚠	ERD2FCG220	22Ω, 1/4W, Fuse Type	2
R183	ERDS2TJ333	33KΩ	1
R184~187	ERDS2TJ104	100KΩ	4
R188	ERDS2TJ332	3.3KΩ	1
R189	ERDS2TJ472	4.7KΩ	1
R190	ERDS2TJ332	3.3KΩ	1
R191	ERDS2TJ472	4.7KΩ	1
R192, 193	ERDS2TJ682	6.8KΩ	2
R194	ERDS2TJ393	39KΩ	1
R195	ERDS2TJ332	3.3KΩ	1
R196	ERDS2TJ222	2.2KΩ	1
R197	ERDS2TJ124	120KΩ	1
R198	ERDS2TJ474	470KΩ	1
R199	ERDS2TJ104	100KΩ	1
R200	ERDS2TJ124	120KΩ	1
R201	ERDS2TJ474	470KΩ	1
R202	ERDS2TJ104	100KΩ	1
R203, 204	ERDS2TJ473	47KΩ	2
R205	ERDS2TJ103	10KΩ	1
R206	ERDS2TJ184	180KΩ	1
R207	ERDS2TJ474	470KΩ	1
R208	ERDS2TJ124	120KΩ	1
R209~211	ERDS2TJ333	33KΩ	3
R212	ERDS2TJ184	180KΩ	1
R213	ERDS2TJ154	150KΩ	1
R214, 215	ERDS2TJ223	22KΩ	2

Ref. No.	Part No.	Description	Per/Set
R216, 217	ERDS2TJ473	47KΩ	2
R218~220	ERDS2TJ104	100KΩ	3
R221	ERDS2TJ333	33KΩ	1
⚠ R222	ERD2FCG220	22Ω, 1/4W, Fuse Type	1
R223	ERDS2TJ154	150KΩ	1
R224	ERDS2TJ153	15KΩ	1
R225	ERDS2TJ103	10KΩ	1
R226	ERDS2TJ154	150KΩ	1
R227, 228	ERDS2TJ332	3.3KΩ	2
R229, 230	ERDS2TJ154	150KΩ	2
R231, 232	ERDS2TJ332	3.3KΩ	2
R233	ERDS2TJ154	150KΩ	1
R234, 235	ERDS2TJ333	33KΩ	2
R236	ERDS2TJ153	15KΩ	1
R237	ERDS2TJ103	10KΩ	1
R238	ERDS2TJ154	150KΩ	1
R239	ERDS2TJ333	33KΩ	1
⚠ R240	ERD2FCG220	22Ω, 1/4W, Fuse Type	1
R241~243	ERDS2TJ104	100KΩ	3
R244	ERDS2TJ473	47KΩ	1
R245	ERDS2TJ684	680KΩ	1
R246	ERDS2TJ154	150KΩ	1
R247	ERDS2TJ104	100KΩ	1
R248	ERDS2TJ154	150KΩ	1
R249	ERDS2TJ104	100KΩ	1
R250	ERDS2TJ473	47KΩ	1
R251, 252	ERDS2TJ104	100KΩ	2
R253	ERDS2TJ473	47KΩ	1
R254, 255	ERDS2TJ683	68KΩ	2
R256~259	ERDS2TJ103	10KΩ	4
R260, 261	ERDS2TJ102	1KΩ	2
R262	ERDS2TJ103	10KΩ	1
R263	ERDS2TJ104	100KΩ	1
R264	ERDS2TJ473	47KΩ	1
R265	ERDS2TJ102	1KΩ	1
R267	ERDS2TJ102	1KΩ	1
R268	ERDS2TJ103	10KΩ	1
R269	ERDS2TJ472	4.7KΩ	1
R270	ERDS2TJ331	330Ω	1
R271	ERDS2TJ681	680Ω	1
R272, 273	ERDS2TJ331	330Ω	2
R276	ERDS2TJ472	4.7KΩ	1
R277	ERDS2TJ331	330Ω	1
R278	ERDS2TJ681	680Ω	1
R279	ERDS2TJ331	330Ω	1
R280	ERDS2TJ104	100KΩ	1
R281	ERDS2TJ473	47KΩ	1
R282	ERDS2TJ104	100KΩ	1
R283	ERDS2TJ331	330Ω	1
R285	ERDS2TJ681	680Ω	1
R286	ERDS2TJ331	330Ω	1
R287	ERDS2TJ223	22KΩ	1
R288	ERDS2TJ104	100KΩ	1
R289	ERDS2TJ473	47KΩ	1
R290	ERDS2TJ331	330Ω	1
R291	ERDS2TJ153	15KΩ	1
R292	ERDS2TJ473	47KΩ	1
R293	ERDS2TJ473	47KΩ	1
R294	ERDS2TJ224	220KΩ	1
R295	ERDS2TJ104	100KΩ	1
R296	ERDS2TJ334	330KΩ	1
R297	ERDS2TJ224	220KΩ	1
R298	ERDS2TJ222	2.2KΩ	1
R301	ERDS2TJ153	15KΩ	1
R302	ERDS2TJ473	47KΩ	1
R304	ERDS2TJ101	100Ω	1
R305	ERDS2TJ104	100KΩ	1
R306	ERDS2TJ222	2.2KΩ	1

Ref. No.	Part No.	Description	Per/Set
R307	ERDS2TJ153	15KΩ	1
R308	ERDS2TJ473	47KΩ	1
R309	ERDS2TJ473	47KΩ	1
R310	ERDS2TJ224	220KΩ	1
R311	ERDS2TJ104	100KΩ	1
R312	ERDS2TJ334	330KΩ	1
R313	ERDS2TJ224	220KΩ	1
R314	ERDS2TJ222	2.2KΩ	1
R316	ERDS2TJ153	15KΩ	1
R318	ERDS2TJ101	100Ω	1
R319	ERDS2TJ104	100KΩ	1
R320	ERDS2TJ222	2.2KΩ	1
R321	ERDS2TJ104	100KΩ	1
R322	ERDS2TJ331	330Ω	1
R323	ERDS2TJ681	680Ω	1
R324	ERDS2TJ331	330Ω	1
R327	ERDS2TJ153	15KΩ	1
R328	ERDS2TJ152	1.5KΩ	1
R329	ERDS2TJ473	47KΩ	1
R330, 331	ERDS2TJ474	470KΩ	2
R332	ERDS2TJ104	100KΩ	1
R333	ERDS2TJ334	330KΩ	1
R334	ERDS2TJ224	220KΩ	1
R335	ERDS2TJ222	2.2KΩ	1
R338	ERDS2TJ153	15KΩ	1
R340	ERDS2TJ101	100Ω	1
R341	ERDS2TJ104	100KΩ	1
R342	ERDS2TJ222	2.2KΩ	1
R343	ERDS2TJ224	220KΩ	1
R344	ERDS2TJ472	4.7KΩ	1
R345~347	ERDS2TJ473	47KΩ	3
R348	ERDS2TJ153	15KΩ	1
R349	ERDS2TJ473	47KΩ	1
R350	ERDS2TJ154	150KΩ	1
R351	ERDS2TJ224	220KΩ	1
R352	ERDS2TJ474	470KΩ	1
R353	ERDS2TJ473	47KΩ	1
R354	ERDS2TJ154	150KΩ	1
R355	ERDS2TJ222	2.2KΩ	1
R356~358	ERDS2TJ154	150KΩ	3
R359	ERDS2TJ101	100Ω	1
R360	ERDS2TJ222	2.2KΩ	1
R361	ERDS2TJ472	4.7KΩ	1
R362~364	ERDS2TJ473	47KΩ	3
R365	ERDS2TJ153	15KΩ	1
R366	ERDS2TJ154	150KΩ	1
R367	ERDS2TJ224	220KΩ	1
R368	ERDS2TJ474	470KΩ	1
R369	ERDS2TJ473	47KΩ	1
R370	ERDS2TJ154	150KΩ	1
R371	ERDS2TJ222	2.2KΩ	1
R372	ERDS2TJ153	15KΩ	1
R373	ERDS2TJ333	33KΩ	1
R374	ERDS2TJ223	22KΩ	1
R375	ERDS2TJ472	4.7KΩ	1
R376, 377	ERDS2TJ100	10Ω	2
R378, 379	ERDS2TJ472	4.7KΩ	2
R380~382	ERDS2TJ473	47KΩ	3
R383, 384	ERDS2TJ153	15KΩ	2
R385	ERDS2TJ471	470Ω	1
R386	ERDS2TJ473	47KΩ	1
R387	ERDS2TJ152	1.5KΩ	1
R388	ERDS2TJ154	150KΩ	1
R389	ERDS2TJ474	470KΩ	1
R390	ERDS2TJ224	220KΩ	1
R391	ERDS2TJ154	150KΩ	1
R392	ERDS2TJ222	2.2KΩ	1
R393	ERDS2TJ152	1.5KΩ	1

Ref. No.	Part No.	Description	Per/Set
R394	ERDS2TJ333	33KΩ	1
R395	ERDS2TJ153	15KΩ	1
R396	ERDS2TJ223	22KΩ	1
R397	ERDS2TJ472	4.7KΩ	1
R398, 399	ERDS2TJ100	10Ω	2
R400	ERDS2TJ472	4.7KΩ	1
R401	ERDS2TJ154	150KΩ	1
R402	ERDS2TJ473	47KΩ	1
R403	ERDS2TJ154	150KΩ	1
R404	ERDS2TJ222	2.2KΩ	1
R405	ERDS2TJ154	150KΩ	1
R406	ERDS2TJ473	47KΩ	1
R407	ERDS2TJ154	150KΩ	1
R408	ERDS2TJ473	47KΩ	1
R409	ERDS2TJ154	150KΩ	1
R410	ERDS2TJ222	2.2KΩ	1
R411	ERDS2TJ154	150KΩ	1
R412	ERDS2TJ473	47KΩ	1
R413	ERDS2TJ104	100KΩ	1
R414	ERDS2TJ473	47KΩ	1
R415	ERDS2TJ104	100KΩ	1
R416	ERDS2TJ473	47KΩ	1
R417	ERDS2TJ154	150KΩ	1
R418	ERDS2TJ222	2.2KΩ	1
R421	ERDS2TJ222	2.2KΩ	1
R422	ERDS2TJ103	10KΩ	1
R424	ERDS2TJ103	10KΩ	1
R425	ERDS2TJ334	330KΩ	1
R426	ERDS2TJ472	4.7KΩ	1
R427	ERDS2TJ221	220Ω	1
R428	ERDS2TJ222	2.2KΩ	1
R429	ERDS2TJ102	1KΩ	1
R430	ERDS2TJ223	22KΩ	1
R431, 432	ERDS2TJ102	1KΩ	2
R433	ERDS2TJ473	47KΩ	1
R434~436 ⚠	ERD2FCJ4R7	4.7Ω, 1/4W, Fuse Type	3
R437	ERDS2TJ154	150KΩ	1
R438, 439	ERDS2TJ473	47KΩ	2
R440	ERDS2TJ154	150KΩ	1
R441, 442	ERDS2TJ472	4.7KΩ	2
R443	ERDS2TJ474	470KΩ	1
R444	ERDS2TJ472	4.7KΩ	1
R445	ERDS2TJ222	2.2KΩ	1
R446	ERDS2TJ102	1KΩ	1
R447	ERDS2TJ472	4.7KΩ	1
R448	ERDS2TJ222	2.2KΩ	1
R449	ERDS2TJ102	1KΩ	1
R450, 451	ERDS2TJ472	4.7KΩ	2
R452	ERDS2TJ681	680Ω	1
R453~455	ERDS2TJ332	3.3KΩ	3
R456	ERDS2TJ223	22KΩ	1
R457	ERDS2TJ105	1MΩ	1
R458	ERDS2TJ152	1.5KΩ	1
R459	ERDS2TJ102	1KΩ	1
R460	ERDS2TJ152	1.5KΩ	1
R461	ERDS2TJ102	1KΩ	1
R462	ERDS2TJ152	1.5KΩ	1
R463	ERDS2TJ102	1KΩ	1
R464, 465	ERDS2TJ105	1MΩ	2
R466, 467	ERDS2TJ223	22KΩ	2
R468, 469	ERDS2TJ334	330KΩ	2
R470	ERDS2TJ104	100KΩ	1
R471	ERDS2TJ473	47KΩ	1
R473	ERDS2TJ124	120KΩ	1
R474	ERDS2TJ104	100KΩ	1
R475	ERDS2TJ274	270KΩ	1
R476	ERDS2TJ154	150KΩ	1
R477	ERDS2TJ105	1MΩ	1

Ref. No.	Part No.	Description	Per/Set
R478	ERDS2TJ104	100KΩ	1
R479	ERDS2TJ473	47KΩ	1
R480	ERDS2TJ683	68KΩ	1
R481	ERDS2TJ124	120KΩ	1
R482	ERDS2TJ104	100KΩ	1
R483	ERDS2TJ274	270KΩ	1
R484	ERDS2TJ154	150KΩ	1
R488, 489	ERDS2TJ154	150KΩ	2
R490	ERDS2TJ683	68KΩ	1
R491	ERDS2TJ124	120KΩ	1
R492~494	ERDS2TJ224	220KΩ	3
R496, 497	ERDS2TJ224	220KΩ	2
R498	ERDS2TJ154	150KΩ	1
R499~501	ERDS2TJ474	470KΩ	3
R502, 503	ERDS2TJ334	330KΩ	2
R504	ERDS2TJ103	10KΩ	1
R505	ERDS2TJ473	47KΩ	1
R506	ERDS2TJ471	470Ω	1
R507 ⚠	ERD2FCG220	22Ω, 1/4W, Fuse Type	1
CAPACITORS			
C1~3	ECKR1E473ZV	0.047μF	3
C4~6	ECEA1HN010S	1μF, 50V	3
C7	ECKR1E473ZV	0.047μF	1
C8	ECCR1H471J	470pF	1
C9	ECQG1H222KZ	0.0022μF	1
C10, 11	ECCR1H471J	470pF	2
C12	ECCR1H101J	100pF	1
C13	ECCR1H471J	470pF	1
C14	ECQG1H222KZ	0.0022μF	1
C15, 16	ECCR1H471J	470pF	2
C17	ECCR1H101J	100pF	1
C18	ECEA1HN010S	1μF, 50V	1
C19	ECKR1E473ZV	0.047μF	1
C20	ECCR1H471J	470pF	1
C21	ECQG1H222KZ	0.0022μF	1
C22, 23	ECCR1H471J	470pF	2
C24	ECCR1H101J	100pF	1
C25	ECCR1H471J	470pF	1
C26	ECQG1H222KZ	0.0022μF	1
C27, 28	ECCR1H471J	470pF	2
C29	ECCR1H101J	100pF	1
C30	ECEA1HN010S	1μF, 50V	1
C31	ECKR1E473ZV	0.047μF	1
C32	ECQG1H102KZ	0.001μF	1
C33	ECQG1H222KZ	0.0022μF	1
C34, 35	ECCR1H471J	470pF	2
C36	ECCR1H101J	100pF	1
C37~39	ECEA1HN010S	1μF, 50V	3
C40~42	ECKR1E473ZV	0.047μF	3
C43	ECCR1H101J	100pF	1
C44	ECKR1E473ZV	0.047μF	1
C45	ECEA1HN010S	1μF, 50V	1
C46	ECEA1CU101	10μF, 16V	1
C47	ECKR1E473ZV	0.047μF	1
C48	ECEA1HN010S	1μF, 50V	1
C49	ECQG1H102KZ	0.001μF	1
C50	ECQV1H104JZ	0.1μF	1
C51	ECEA1CU100	10μF, 16V	1
C52	ECEA1HU010	1μF, 50V	1
C53	ECCR1H101J	100pF	1
C54	ECQG1H222KZ	0.0022μF	1
C55, 56	ECCR1H101J	100pF	2
C57	ECCR1H681J	680pF	1
C58	ECEA1CU470	47μF, 16V	1
C59	ECEA1HU010	1μF, 50V	1
C60	ECQV1H104JZ	0.1μF	1

Ref. No.	Part No.	Description	Per/Set
C61	ECEA1HN010S	1μF, 50V	1
C62	ECEA1CU100	10μF, 16V	1
C63	ECEA1HU010	1μF, 50V	1
C64	ECEA1CU470	47μF, 16V	1
C65	ECQM1H103KV	0.01μF	1
C66	ECQV1H104JZ	0.1μF	1
C67	ECQG1H102KZ	0.001μF	1
C68	ECQG1H332KZ	0.0033μF	1
C69	ECQV1H104JZ	0.1μF	1
C70	ECEA1CU470	47μF, 16V	1
C71	ECQM1H103KV	0.01μF	1
C72	ECEA1CU100	10μF, 16V	1
C73	ECQV1H473JZ	0.047μF	1
C74	ECQV1H104JZ	0.1μF	1
C75	ECEA1HU010	1μF, 50V	1
C76, 77	ECKR1E473ZV	0.047μF	2
C78~81	ECEA1CU470	47μF, 16V	4
C82~91	ECKR1E473ZV	0.047μF	10
C92~94	ECEA1HU2R2	2.2μF, 50V	3
C95	ECEA1CU100	10μF, 16V	1
C96~98	ECEA1HU2R2	2.2μF, 50V	3
C99	ECEA1HN010S	1μF, 50V	1
C100	ECQG1H102KZ	0.001μF	1
C101	ECQV1H104JZ	0.1μF	1
C102	ECEA1CU100	10μF, 16V	1
C103, 104	ECCR1H101J	100pF	2
C105	ECCR1H681J	680pF	1
C106	ECEA1CU470	47μF, 16V	1
C107	ECCR1H680J	68pF	1
C108	ECCR1H471J	470pF	1
C109	ECEA1HU010	1μF, 50V	1
C110	ECCR1H101J	100pF	1
C111	ECQG1H222KZ	0.0022μF	1
C113, 114	ECCR1H101J	100pF	2
C115	ECCR1H681J	680pF	1
C116	ECEA1CU470	47μF, 16V	1
C117	ECCR1H471J	470pF	1
C118	ECCR1H680J	68pF	1
C119	ECEA1HU010	1μF, 50V	1
C120	ECCR1H101J	100pF	1
C121	ECQG1H222KZ	0.0022μF	1
C122, 123	ECCR1H101J	100pF	2
C124	ECCR1H681J	680pF	1
C125	ECEA1CU470	47μF, 16V	1
C126	ECCR1H471J	470pF	1
C127	ECEA1HU010	1μF, 50V	1
C128	ECCR1H101J	100pF	1
C129	ECQG1H222KZ	0.0022μF	1
C130	ECQV1H474JZ	0.47μF	1
C131	ECQV1H473JZ	0.047μF	1
C132	ECQV1H683JZ	0.068μF	1
C133	ECQG1H682KZ	0.0068μF	1
C136	ECQV1H683JZ	0.068μF	1
C137	ECQM1H103KV	0.01μF	1
C138	ECEA1HU010	1μF, 50V	1
C139	ECEA50ZR22	0.22μF, 50V	1
C140, 141	ECCR1H101J	100pF	2
C142	ECQG1H102KZ	0.001μF	1
C143	ECEA1CU470	47μF, 16V	1
C144	ECQM1H333KV	0.033μF	1
C145	ECCR1H681J	680pF	1
C146	ECCR1H680J	68pF	1
C147	ECEA1HU010	1μF, 50V	1
C148, 149	ECCR1H101J	100pF	2
C150	ECQG1H102KZ	0.001μF	1
C151	ECEA1CU470	47μF, 16V	1
C152	ECQM1H333KV	0.033μF	1
C153	ECCR1H681J	680pF	1

Ref. No.	Part No.	Description	Per/Set
C154	ECCR1H680J	68pF	1
C155	ECEA1HU010	1μF, 50V	1
C156, 157	ECCR1H220J	22pF	2
C158	ECCR1H470J	47pF	1
C159	ECCR1H471J	470pF	1
C160	ECCR1H680J	68pF	1
C161	ECQV1H104JZ	0.1μF	1
C162	ECEA1CU470	47μF, 16V	1
C163	ECQM1H103KV	0.01μF	1
C164	ECQV1H104JZ	0.1μF	1
C165	ECQG1H102KZ	0.001μF	1
C166	ECQV1H104JZ	0.1μF	1
C167	ECQG1H332KZ	0.0033μF	1
C168	ECEA1CU470	47μF, 16V	1
C169, 170	ECKR1E473ZV	0.047μF	2
C171	ECEA1CU100	10μF, 16V	1
C172	ECQV1H473JZ	0.047μF	1
C173	ECEA1HU010	1μF, 50V	1
C174, 175	ECQG1H682KZ	0.0068μF	2
C176	ECEA1HU010	1μF, 50V	1
C177	ECEA1CU470	47μF, 16V	1
C178	ECQM1H103KV	0.01μF	1
C179	ECEA1CU100	10μF, 16V	1
C180	ECQV1H104JZ	0.1μF	1
C181	ECQV1H473JZ	0.047μF	1
C182	ECEA1CU470	47μF, 16V	1
C183	ECQM1H103KV	0.01μF	1
C184	ECQV1H104JZ	0.1μF	1
C185	ECQG1H102KZ	0.001μF	1
C186	ECQG1H332KZ	0.0033μF	1
C187, 188	ECKR1E473ZV	0.047μF	2
C189, 190	ECEA1HN010S	1μF, 50V	2
C191, 192	ECCR1H331J	330pF	2
C193, 194	ECKR1E473ZV	0.047μF	2
C195~197	ECCR1H331J	330pF	3
C198	ECKR1E473ZV	0.047μF	1
C199~201	ECCR1H331J	330pF	3
C202, 203	ECCR1H220J	22pF	2
C204, 205	ECEA1HN010S	1μF, 50V	2
C206	ECCR1H101J	100pF	1
C207	ECEA1HU010	1μF, 50V	1
C208, 209	ECEA1CU331	330μF, 16V	2
C210	ECEA0JU101	100μF, 6.3V	1
C211~215	ECKR1E473ZV	0.047μF	5
C216	ECEA1CU100	10μF, 16V	1
C217	ECEA1HU010	1μF, 50V	1
C218	ECEA1CU100	10μF, 16V	1
C220	ECEA1HU010	1μF, 50V	1
C221~223	ECCR1H220J	22pF	3
C224	ECEA1EU4R7	4.7μF, 25V	1
C225	ECCR1H220J	22pF	1
C226	ECCR1H470J	47pF	1
C227	ECEA1HU010	1μF, 50V	1
C228	ECCR1H151J	150pF	1
C229, 230	ECCR1H471J	470pF	2
C231, 232	ECQG1H222KZ	0.0022μF	2
C233, 234	ECCR1H221J	220pF	2
C235	ECCR1H470J	47pF	1
C236	ECQV1H104JZ	0.1μF	1
C237	ECEA1HU010	1μF, 50V	1
C238	ECKR1E473ZV	0.047μF	1
C239	ECCR1H470J	47pF	1
C240	ECCR1H220J	22pF	1
C241	ECQV1H473JZ	0.047μF	1
C242	ECCR1H220J	22pF	1
C243	ECCR1H470J	47pF	1
C244	ECKR1E473ZV	0.047μF	1
C245	ECEA1HU010	1μF, 50V	1

Ref. No.	Part No.	Description	Per/Set
C246	ECQG1H332KZ	0.0033μF	1
C247	ECQG1H102KZ	0.001μF	1
C248	ECQV1H104JZ	0.1μF	1
C249	ECQG1H472KZ	0.0047μF	1
C250, 251	ECEA1CU470	47μF, 16V	2
C252, 253	ECKR1E473ZV	0.047μF	2
C254	ECEA1CU100	10μF, 16V	1
C255	ECQG1H222KZ	0.0022μF	1
C256, 257	ECCR1H221J	220pF	2
C258	ECCR1H470J	47pF	1
C259	ECQV1H104JZ	0.1μF	1
C260	ECEA1HU010	1μF, 50V	1
C261～264	ECCR1H470J	47pF	4
C265	ECEA1HU010	1μF, 50V	1
C266, 267	ECEA1CU470	47μF, 16V	2
C268	ECQG1H472KZ	0.0047μF	1
C269	ECEA1CU100	10μF, 16V	1
C270	ECQV1H473JZ	0.047μF	1
C271	ECQG1H472KZ	0.0047μF	1
C272	ECQV1H104JZ	0.1μF	1
C273	ECQG1H102KZ	0.001μF	1
C274	ECQG1H332KZ	0.0033μF	1
C275, 276	ECEA1HU010	1μF, 50V	2
C277	ECKR1E473ZV	0.047μF	1
C278, 279	ECCR1H470J	47pF	2
C280, 281	ECCR1H220J	22pF	2
C282	ECQM1H223KV	0.022μF	1
C284	ECQM1H223KV	0.022μF	1
C286	ECQM1H223KV	0.022μF	1
C288～291	ECQM1H223KV	0.022μF	4
C292	ECEA1HU010	1μF, 50V	1
C293	ECCR1H680J	68pF	1
C294	ECQV1H104JZ	0.1μF	1
C295	ECCR1H470J	47pF	1
C296	ECCR1H220J	22pF	1
C297	ECQV1H473JZ	0.047μF	1
C298, 299	ECEA1HU010	1μF, 50V	2
C300～302	ECKR1E473ZV	0.047μF	3
C303	ECEA1HN010S	1μF, 50V	1
C304～309	ECKR1E473ZV	0.047μF	6
C310	ECCR1H221J	220pF	1
C311～318	ECKR1E473ZV	0.047μF	8
C320	ECEA1HN010S	1μF, 50V	1

DRV DIGITAL REVERB CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC2	SVIGM74HC244	3-State Buffer	1
○ IC3	SVIG87064071	Digital Signal Processor	1
○ IC4, 5, 13～20	SVIGM74HC374	3-state D-type Flip-Flop	10
○ IC6, 7	SVIGHM65256	256K bit RAM	2
IC8	SVIGM74HC138	Decoder	1
○ IC9～12, 24	SVIGM74H164	Shift Register	5
○ IC21～23	SVIGM74H74	Dual D-type Flip-Flops	3
○ IC25, 27	SVIGM74H32	Quad 2-Input OR Gates	2
○ IC26	SVIGM74H08	Quad 2-Input NAND Gates	1
○ IC28, 29	SVIGM74H04	Hex Inverters	2
IC30	MN1280R	Reset IC	1
IC32, 37～39	SVIGM5218L	Operational Amplifier	4
○ IC33	SVIGM5220L	Operational Amplifier	1
○ IC34	MN8305S	A-D Converter	1
○ IC35	SVIGPCM54	D-A Converter	1
IC36	SVIGM74H4066	Quad Bilateral Switches	1
○ IC41	SVIGM5278L05	+5V Voltage Regulator	1

Ref. No.	Part No.	Description	Per/Set
DIODES			
D3, 4	MA165TA5		2
OSCILLATORS			
○ X1	SVQG49S1228T	12.288MHz, Quartz Oscillator	1
○ X2	SVQG49S2000T	20MHz, Quartz Oscillator	1
COMPONENT COMBINATION			
Z1	EXBP88222JM	2.2KΩ×8	1
SEMI-FIXED RESISTOR			
VR2	EVSG0E1B223A	22KΩ B, Offset ADJ.	1
RESISTORS			
R18, 19	ERDS2TJ473	47KΩ	2
R20	ERDS2TJ682	6.8KΩ	1
R21～23	ERDS2TJ473	47KΩ	3
R24	ERDS2TJ103	10KΩ	1
R25	ERDS2TJ224	220KΩ	1
R26	ERDS2TJ103	10KΩ	1
R27, 28	ERDS2TJ473	47KΩ	2
R29	ERDS2TJ224	220KΩ	1
R30	ERDS2TJ183	18KΩ	1
R31	ERDS2TJ152	1.5KΩ	1
R32	ERDS2TJ563	56KΩ	1
R33, 34	ERDS2TJ823	82KΩ	2
R35, 36 ⚠	ERD2FCJ4R7	4.7Ω, 1/4W, Fuse Type	2
R37, 38 ⚠	ERD2FCG100	10Ω, 1/4W, Fuse Type	2
R39, 40 ⚠	ERD2FCJ4R7	4.7Ω, 1/4W, Fuse Type	2
R41～43	ERDS2TJ222	2.2KΩ	3
R44	ERDS2TJ472	4.7KΩ	1
R45	ERDS2TJ473	47KΩ	1
R46	ERDS2TJ103	10KΩ	1
R47	ERDS2TJ334	330KΩ	1
R48	ERDS2TJ473	47KΩ	1
R49	ERDS2TJ103	10KΩ	1
R50	ERDS2TJ334	330KΩ	1
R51	ERDS2TJ682	6.8KΩ	1
R52～54	ERDS2TJ473	47KΩ	3
R55	ERDS2TJ682	6.8KΩ	1
R56～58	ERDS2TJ473	47KΩ	3
R59	ERDS2TJ682	6.8KΩ	1
R60～62	ERDS2TJ473	47KΩ	3
R63	ERDS2TJ682	6.8KΩ	1
R64～66	ERDS2TJ473	47KΩ	3
R71	ERDS2TJ151	150Ω	1
R72	ERDS2TJ105	1MΩ	1
CAPACITORS			
C12, 13	ECQM1H153KV	0.015μF	2
C14	ECQG1H472KZ	0.0047μF	1
C15, 16	ECCR1H471J	470pF	2
C17	ECCR1H101J	100pF	1
C18	ECEA50M1R	1μF, 50V	1
C19	ECEA1CN100S	10μF, 16V	1
C20	ECEA50M1R	1μF, 50V	1
C21	ECQG1H472KZ	0.0047μF	1
C22	ECCR1H471J	470pF	1
C23	ECEA0JU101	100μF, 6.3V	1
C24	ECEA0JU221	220μF, 6.3V	1
C25	ECEA0JU331	330μF, 6.3V	1
C26	ECKR1E473ZV	0.047μF	1
C27, 28	ECEA1CU101	100μF, 16V	2

Ref. No.	Part No.	Description	Per/Set
C29, 30	ECEA1CU470	47µF, 16V	2
C31, 32	ECEA1HU010	1µF, 50V	2
C33	ECCR1H101J	100pF	1
C34	ECEA1HU010	1µF, 50V	1
C35	ECCR1H101J	100pF	1
C36	ECQG1H472KZ	0.0047µF	1
C37, 38	ECCR1H471J	470pF	2
C39	ECCR1H101J	100pF	1
C40	ECQG1H472KZ	0.0047µF	1
C41, 42	ECCR1H471J	470pF	2
C43	ECCR1H101J	100pF	1
C44	ECQG1H472KZ	0.0047µF	1
C45, 46	ECCR1H471J	470pF	2
C47	ECCR1H101J	100pF	1
C48	ECQG1H472KZ	0.0047µF	1
C49, 50	ECCR1H471J	470pF	2
C51	ECCR1H101J	100pF	1
C64, 65	ECEA1CU470	47µF, 16V	2
C66~69	ECCR1H220J	22pF	4
C70	ECEA0JU101	100µF, 6.3V	1
C72~74	ECKR1E473ZV	0.047µF	3
C76, 77	ECKR1E473ZV	0.047µF	2
C79	ECKR1E473ZV	0.047µF	1
C82	ECKR1E473ZV	0.047µF	1
C84	ECKR1E473ZV	0.047µF	1
C87, 88	ECKR1E473ZV	0.047µF	2
C90~94	ECKR1E473ZV	0.047µF	5
C96~98	ECKR1E473ZV	0.047µF	3
C99	ECEA1CU100	10µF, 16V	1
C100	ECCR1H101J	100pF	1

MKB1 MANUAL KEYBOARD 1 CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
		INTEGRATED CIRCUITS		
	IC1	SVIGM74LS138	Decoder	1
		DIODES		
S	D25~61	MA162A	MA150IR	37
		SWITCHES		
	S25~54	SSPG6001A	Rubber Switch (6 continuous)	5
	S55~61	SSPG7001A	Rubber Switch (7 continuous)	1
		CAPACITORS		
	C1	ECKR1E473ZV	0.047µF	1

MKB3 MANUAL KEYBOARD 3 CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
		DIODES		
S	D13~24	MA162A	MA150IR	12
		SWITCHES		
	S13~24	SSPG6001A	Rubber Switch (6 continuous)	2

PKB PEDAL KEYBOARD CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
		DIODES		
S	D1~16	MA162A	MA150IR	16
		SWITCHES		
	S1~14	SHGG50A	Rubber Switch (5 continuous)	3

EXP EXPRESSION CIRCUIT

Ref. No.	Part No.	Description	Per/Set
	Cds		
CS1	SVEG5	Light Sensitive Device	1

ACP AC POWER SUPPLY CIRCUIT

Ref. No.	Part No.	Description	Per/Set
	LINE FILTERS		
L1 ⚠	SLTGLF5	Line Filter	1
L2 ⚠	SLTGLF4	Line Filter	1
	VOLTAGE SELECTOR		
S1 EK XS ⚠ XL XR X	ESE37209	Voltage Selector	1
	FUSES		
F1 EK XS ⚠ XL XR X	XBA2C31TB0	T3.15A, 250V	1
F1 M MC ⚠	XBA1C63NU100	6.3A, 125V	1
F2 ⚠	XBA2C16TB0	T1.6A, 250V, European areas	1
	CAPACITORS		
C1 ⚠	ECKCVA1472MF	4700pF, Line-Capasitor	1
C2 ⚠	ECQU2A104MN	0.1µF, Across-the Line Capasitor	1

PS POWER SUPPLY CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
		INTEGRATED CIRCUIT		
	IC1	SVIGM5291P	Switching Regulator	1
		TRANSISTORS		
S	Q1, 2	2SC2320LFG	2SC1310FG	2
	Q3	2SB953AQP		1
	Q4	2SD1277A		1
	Q5	2SB951A		1
	Q6, 7	2SJ105GR		2
		DIODES		
	D1~4 ⚠	SVDGERA1502Y	Rectifier	4
	D5, 6 ⚠	SVDS2V20	Rectifier	2
	D7	MA165TA5		1
	D8	SVDGERC9102		1
	D9	MA2062LF	Zener, 6.2V	1
	D10, 11	MA4160	Zener, 16, 0V	2

Ref. No.	Part No.	Description	Per/Set
COIL			
L1	SLCG3A121T	Coil	1
FUSES			
F3 [M] [MC] ⚠	XBA1C31NU100	3.15A, 125V	1
F5 ⚠	XBA2C31TB0	T3.15A, 250V, Except for [M] & [MC]	1
RESISTORS			
R1~3	ERDS2TJ103	10KΩ	3
R4	ERDS2TJ471	470Ω	1
R5, 6	ERDS2TJ473	47KΩ	2
R7	ERDS2TJ104	100KΩ	1
R8	ERDS2TJ472	4.7KΩ	1
R9, 10 ⚠	ERQ14AJ2R0	2Ω, 1/4W, Fuse Type	2
R11 ⚠	ERX1ANJR22	0.22Ω, 1W, Flame-Proof	1
R12	ERDS2TJ681	680Ω	1
R13	ERDS2TJ152	1.5KΩ	1
R14	ERDS2TJ101	100Ω	1
R15 ⚠	ERG1ANJP391S	390Ω, 1W, Flame-Proof	1
R16	ERDS2TJ332	3.3KΩ	1
R17	ERDS2TJ102	1KΩ	1
R18, 19 ⚠	ERQ12HKR47	0.47Ω, 1/2W, Fuse Type	2
CAPACITORS			
C1	ECEA1EU4R7	4.7μF, 25V	1
C2	ECQV1H104JZ	0.1μF	1
C3	ECEA1VU100	10μF, 35V	1
C4	ECCR1H471J	470pF	1
C5	ECEA0JU222	2200μF, 6.3V	1
C6	ECKR1E473ZV	0.047μF	1
C7	ECEA1VU100	10μF, 35V	1
C8	ECEA1HN010S	1μF, 50V	1
C9	ECEA1VU332	3300μF, 35V	1
C11	ECEA1VU222	2200μF, 35V	1
C12	ECEA1VU100	10μF, 35V	1
C13	ECEA1HU010	1μF, 50V	1
C14	ECEA0JU222	2200μF, 6.3V	1

PA POWER AMPLIFIER CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1, 2	SVIGS4221M2M	Power Amplifier	2
DIODES			
D1, 2, 4, 5, ⚠ 8, 9, 11, 12	SVDS3V20	Rectifier	8
RESISTORS			
R1	ERDS2TJ333	33KΩ	1
R2	ERDS2TJ103	10KΩ	1
R3	ERDS2TJ222	2.2KΩ	1
R4	ERDS2TJ393	39KΩ	1
R5	ERDS2TJ472	4.7KΩ	1
R6, 7	ERDS2TJ222	2.2KΩ	2
R8	ERDS2TJ224	220KΩ	1
R9	ERDS2TJ103	10KΩ	1
R11	ERDS2TJ681	680Ω	1

Ref. No.	Part No.	Description	Per/Set
R12, 13	ERDS2TJ102	1KΩ	2
R14 ⚠	ERD50FJ4R7	4.7Ω, 1/2W, Flame-Proof	1
R15 ⚠	ERD2FCG101	100Ω, 1/4W, Fuse Type	1
R16 ⚠	ERD50FJ4R7	4.7Ω, 1/2W, Flame-Proof	1
R17, 18	ERDS2TJ222	2.2KΩ	2
R19	ERDS2TJ472	4.7KΩ	1
R20	ERDS2TJ563	56KΩ	1
R21	ERDS2TJ222	2.2KΩ	1
R23	ERDS2TJ183	18KΩ	1
R24	ERDS2TJ223	22KΩ	1
R27	ERDS2TJ333	33KΩ	1
R28	ERDS2TJ103	10KΩ	1
R29	ERDS2TJ222	2.2KΩ	1
R30	ERDS2TJ393	39KΩ	1
R31	ERDS2TJ472	4.7KΩ	1
R32, 33	ERDS2TJ222	2.2KΩ	2
R34	ERDS2TJ103	10KΩ	1
R35	ERDS2TJ224	220KΩ	1
R36	ERDS2TJ681	680Ω	1
R37, 38	ERDS2TJ102	1KΩ	2
R39 ⚠	ERD50FJ4R7	4.7Ω, 1/2W, Flame-Proof	1
R40 ⚠	ERD2FCG101	100Ω, 1/4W, Fuse Type	1
R41 ⚠	ERD50FJ4R7	4.7Ω, 1/2W, Flame-Proof	1
R42, 43	ERDS2TJ222	2.2KΩ	2
R44	ERDS2TJ472	4.7KΩ	1
R45	ERDS2TJ393	39KΩ	1
R46	ERDS2TJ222	2.2KΩ	1
R47	ERDS2TJ103	10KΩ	1
R48	ERDS2TJ333	33KΩ	1
CAPACITORS			
C1	ECQM1H153KV	0.015μF	1
C2	ECCR1H221J	220pF	1
C3	ECEA1EU100	10μF, 25V	1
C4	ECEA1HU470	47μF, 50V	1
C5	ECEA1HU4R7	4.7μF, 50V	1
C6	ECQV1H104JZ	0.1μF	1
C7	ECEA1HU470	47μF, 50V	1
C8	ECQV1H104JZ	0.1μF	1
C9	ECEA1HU470	47μF, 50V	1
C10	ECEA1EU100	10μF, 25V	1
C11	ECQV1H104JZ	0.1μF	1
C12	ECEA1HN010S	1μF, 50V	1
C13	ECES1HU103U	10000μF, 50V	1
C14, 15	ECEA50Y1	1μF, 50V	2
C16	ECQM1H153KV	0.015μF	1
C17	ECCR1H221J	220pF	1
C18	ECEA1EU100	10μF, 25V	1
C19	ECEA1HU470	47μF, 50V	1
C20	ECEA1HU4R7	4.7μF, 50V	1
C21	ECQV1H104JZ	0.1μF	1
C22	ECEA1HU470	47μF, 50V	1
C23	ECQV1H104JZ	0.1μF	1
C24	ECEA1HU470	47μF, 50V	1
C25	ECEA1EU100	10μF, 25V	1
C27	ECCR1H221J	220pF	1
C28	ECQM1H153KV	0.015μF	1
C29	ECES1HU103U	10000μF, 50V	1
C30	ECQE2A104MW	0.1μF	1

CPL UPPER CONTROL PANEL LEFT CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
		INTEGRATED CIRCUITS		
	IC1	MN15524PGY	1 chip 4 bit Microcomputer	1
	IC2~5	SVIGM74LS07	Hex Buffers (O.C.)	4
	IC6	MN1280R	Reset IC	1
		TRANSISTORS		
	Q1~4	2SA830SB		4
	Q5	2SC1047C		1
S	Q6	2SC2320LFG	2SC1310FG	1
		DIODES		
	D1~76	MA165TA5		76
	D77~144	SVDGSEL4117R	LED (red)	68
		OSCILLATOR		
	X1	EF0FC4004A3	4MHz, Ceramic Oscillator	1
		SWITCHES		
	S1~58, 60~76	SSHG1045A	Push switch	75
		RESISTORS		
	R1	ERDS2TJ222	2.2KΩ	1
	R2~6	ERDS2TJ103	10KΩ	5
	R7~10	ERDS2TJ152	1.5KΩ	4
	R11~32	ERDS2TJ470	47Ω	22
	R33, 34	ERDS2TJ472	4.7KΩ	2
	R35	ERDS2TJ222	2.2KΩ	1
	R38~59	ERDS2TJ152	1.5KΩ	22
		CAPACITORS		
	C1	ECEA0JK470	47μF, 6.3V	1
○	C2	ECRR1H104ZF	0.1μF	1
	C3	ECCR1H471J	470pF	1
○	C4~8	ECRR1H104ZF	0.1μF	5

JACK JACK CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
		INTEGRATED CIRCUIT		
	IC1	SVIGM5218L	Operational Amplifier	1
		COILS		
	L1, 3	SLQG15W34DPQ	Coil	2
	L2	SLQG15W24DPQ	Coil	1
		JACKS		
	JK1, 2	SJJG470A	Line Out	1
	JK3	SJJG210A	Mic	1
	JK4	SJJG100A	Headphones	1
		VARIABLE RESISTOR		
	VR1	EWHD5A576A54	500KΩ A, Mic Volume	1

	Ref. No.	Part No.	Description	Per/Set
		RESISTORS		
	R1, 2 ⚠	ERD2FCG100	10Ω, 1/4W, Fuse Type	2
	R3	ERDS2TJ472	4.7KΩ	1
	R4	ERDS2TJ102	1KΩ	1
	R5	ERDS2TJ222	2.2KΩ	1
	R6	ERDS2TJ102	1KΩ	1
	R7	ERDS2TJ472	4.7KΩ	1
	R8	ERDS2TJ222	2.2KΩ	1
	R9	ERDS2TJ224	220KΩ	1
	R10	ERDS2TJ103	10KΩ	1
	R11	ERDS2TJ224	220KΩ	1
	R12	ERDS2TJ103	10KΩ	1
	R13	ERDS2TJ154	150KΩ	1
	R14	ERDS2TJ102	1KΩ	1
	R15, 16 ⚠	ERG1ANJP680S	68Ω, 1W, Flame-Proof	2
	R17~19	ERDS2TJ102	1KΩ	3
		CAPACITORS		
	C1, 2	ECEA1EU470	47μF, 25V	2
	C3	ECEA1HN010S	1μF, 50V	1
	C4, 5	ECCR1H101J	100pF	2
	C6, 7	ECKR1E473ZV	0.047μF	2
	C8	ECEA1HN010S	1μF, 50V	1

CPC UPPER CONTROL PANEL CENTER CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
		INTEGRATED CIRCUITS		
	IC1	MN15524PGY	1 chip 4 bit Microcomputer	1
	IC2	MN1280R	Reset IC	1
	IC3~6	SVIGM74LS07	Hex Buffers (O.C.)	4
○	IC10	SVIGUPD7225	LCD Driver	1
		TRANSISTORS		
	Q1~4	2SA830SB		4
	Q5	2SC1047C		1
S	Q6~8	2SC2320LFG	2SC1310FG	3
		DIODES		
	D1~11, 13~71, 73~77, 151	MA165TA5		76
	D78~88, 90~130, 134~144, 149, 150	SVDGSEL4117R	LED (red)	65
	D131~133, 145~148	SVDGSEL4417G	LED (green)	7
		LCD DISPLAY		
○	LCD1	SXEG100A	LCD Display	1
		OSCILLATOR		
	X1	EF0FC4004A3	4MHz, Ceramic Oscillator	1
		SWITCHES		
	S1~77	SSHG1045A	Push switch	77

Ref. No.	Part No.	Description	Per/Set
LAMPS			
○ LP1~4	XAMG6P	8V, 150mA	4
RESISTORS			
R1	ERDS2TJ222	2.2KΩ	1
R2	ERDS2TJ472	4.7KΩ	1
R3	ERDS2TJ103	10KΩ	1
R4	ERDS2TJ472	4.7KΩ	1
R5	ERDS2TJ222	2.2KΩ	1
R6~9	ERDS2TJ103	10KΩ	4
R10~13	ERDS2TJ152	1.5KΩ	4
R14~35	ERDS2TJ470	47Ω	22
R36~57	ERDS2TJ152	1.5KΩ	22
R58	ERDS2TJ103	10KΩ	1
R59	ERDS2TJ104	100KΩ	1
R60~62	ERDS2TJ472	4.7KΩ	3
R64	ERDS2TJ184	180KΩ	1
CAPACITORS			
○ C1	ECRR1H104ZF	0.1μF	1
C2	ECCR1H471J	470pF	1
○ C3~7	ECRR1H104ZF	0.1μF	5
C8	ECEA0JK470	47μF, 6.3V	1

CPR UPPER CONTROL PANEL RIGHT CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1	MN15524PGY	1 chip 4 bit Microcomputer	1
IC2	MN1280R	Reset IC	1
IC3~5	SVIGM74LS07	Hex Buffers (O.C.)	3
TRANSISTORS			
Q1~4	2SA830SB		4
Q5	2SC1047C		1
S Q6	2SC2320LFG	2SC1310FG	1
DIODES			
D1~67	MA165TA5		67
D68~105, 107~132	SVDGSEL4117R	LED (red)	64
D106	SVDGSEL4417G	LED (green)	1
OSCILLATOR			
X1	EF0FC4004A3	4MHz, Ceramic Oscillator	1
SWITCHES			
S3~67	SSHG1045A	Push switch	65
RESISTORS			
R1	ERDS2TJ222	2.2KΩ	1
R2	ERDS2TJ472	4.7KΩ	1
R3	ERDS2TJ103	10KΩ	1
R4	ERDS2TJ222	2.2KΩ	1
R5~8	ERDS2TJ152	1.5KΩ	4
R9~26	ERDS2TJ470	47Ω	18
R27~46	ERDS2TJ152	1.5KΩ	20
R47~50	ERDS2TJ103	10KΩ	4
R51	ERDS2TJ472	4.7KΩ	1

Ref. No.	Part No.	Description	Per/Set
CAPACITORS			
C1	ECEA0JK470	47μF, 6.3V	1
○ C2	ECRR1H104ZF	0.1μF	1
C3	ECCR1H471J	470pF	1
○ C4~6	ECRR1H104ZF	0.1μF	3

CPSL LOWER CONTROL PANEL LEFT CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1	MN15524PGY	1 chip 4 bit Microcomputer	1
IC2, 3	SVIGM74LS07	Hex Buffers (O.C.)	2
○ IC4	SVIGUPD7225	LCD Driver	1
IC5	MN1280R	Reset IC	1
TRANSISTORS			
Q1~4	2SA830SB		4
Q5	2SC1047C		1
S Q6, 9, 10	2SC2320LFG	2SC1310FG	3
S Q7, 8	2SA1015-GR	2SA933STRS	2
DIODES			
D1~67	MA165TA5		67
D68~71, 76~80, 82~85, 87, 88, 91, 92, 95, 99~101, 104~110, 116~118	SVDGSEL4117R	LED (red)	31
D72~75, 81, 86, 89, 90, 93, 94, 96~98, 102, 103, 111~114	SVDGSEL4417G	LED (green)	19
LCD DISPLAY			
○ LCD1	SXEG110A	LCD Display	1
OSCILLATOR			
X1	EF0FC4004A3	4MHz, Ceramic Oscillator	1
COMPONENT COMBINATIONS			
Z1	EXBP86152JM	1.5KΩ×6	1
Z2	EXBP84152JM	1.5KΩ×4	1
SWITCHES			
S1~69	SSHG1045A	Push switch	69
LAMPS			
○ LP1~6	XAMG6P	8V, 150mA	6
VARIABLE RESISTORS			
VR1, 2	EVD06510B24G	20KΩ B, Tempo Control, Main Volume	2

Ref. No.	Part No.	Description	Per/Set
RESISTORS			
R1	ERDS2TJ222	2.2KΩ	1
R2	ERDS2TJ472	4.7KΩ	1
R3	ERDS2TJ103	10KΩ	1
R4	ERDS2TJ222	2.2KΩ	1
R5	ERDS2TJ472	4.7KΩ	1
R6, 7	ERDS2TJ103	10KΩ	2
R8, 9	ERDS2TJ152	1.5KΩ	2
R10~13	ERDS2TJ470	47Ω	4
R18, 19	ERDS2TJ330	33Ω	2
R20~27	ERDS2TJ470	47Ω	8
R28~39	ERDS2TJ152	1.5KΩ	12
R44	ERDS2TJ103	10KΩ	1
R45	ERDS2TJ104	100KΩ	1
R46	ERDS2TJ184	180KΩ	1
CAPACITORS			
○ C1, 2	ECRR1H104ZF	0.1μF	2
○ C5	ECRR1H104ZF	0.1μF	1
C6	ECEA0JK470	47μF, 6.3V	1
C7	ECCR1H471J	470pF	1

FDCU FD CONTROL UPPER CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC2	SVIGM74LS05	Hex Inverters (O.C.)	1
IC3	SVIGTC40H004	Hex Inverters	1
IC6	SVIGM74LS393	4 bit Binary Counter	1
IC7	SVIGM5W17930	FD Formatter/Controller	1
IC8	SVIGM74LS193	Up/Down Counter	1
OSCILLATOR			
X1	SVQG49S8000T	8MHz, Quartz Oscillator	1
COMPONENT COMBINATION			
Z1	EXBP88102JM	1KΩ×8	1
RESISTORS			
R2	ERDS2TJ105	1MΩ	1
R4	ERDS2TJ103	10KΩ	1
CAPACITORS			
○ C6	ECRR1H104ZF	0.1μF	1
C7	ECCR1H101J	100pF	1
C8	ECCR1H330J	33pF	1
C9	ECCR1H220J	22pF	1
○ C14, 15	ECRR1H104ZF	0.1μF	2
○ C16	ECEA1CX470	47μF, 16V	1
○ C17	ECRR1H104ZF	0.1μF	1

FDCL FD CONTROL LOWER CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1	MN15621PGL	1 chip 4 bit Microcomputer	1
IC4	SVIGM51953A	Reset IC	1
○ IC5	SVIGD4364X15	64K bit RAM	1

Ref. No.	Part No.	Description	Per/Set
TRANSISTORS			
Q1	2SC1047C		1
S Q2	2SC2320LFG	2SC1310FG	1
DIODE			
D1	MA165TA5		1
OSCILLATOR			
○ X2	EF0FC4504A5	4.5MHz, Ceramic Oscillator	1
RESISTORS			
R1	ERDS2TJ472	4.7KΩ	1
R3	ERDS2TJ103	10KΩ	1
R5	ERDS2TJ681	680Ω	1
R6	ERDS2TJ102	1KΩ	1
R7	ERDS2TJ222	2.2KΩ	1
CAPACITORS			
○ C3	ECEA1HXR33	0.33μF, 50V	1
○ C4	ECRR1H104ZF	0.1μF	1
C5	ECCR1H471J	470pF	1
○ C10	ECEA1HXR33	0.33μF, 50V	1
○ C11, 12	ECEA1CX470	47μF, 16V	2
○ C13	ECEA1HXR33	0.33μF, 50V	1

■ WIRING PARTS (see wiring diagram on page II-1, II-2)

Ref. No.	Part No.	Description	Per/Set
○ W1	SWKG08111LSA	Connector, with Wire	1
○ W2	SWKG06120SSA	Connector, with Wire	1
○ W3	SWKG04139ZA	Connector, with Wire	1
○ W4	SWKG03110SSA	Connector, with Wire	1
○ W5	SWKG114SSA	Connector, with Wire	1
○ W6	SWKG126SSA	Connector, with Wire	1
W7, 9	SWKG1410SSA	Connector, with Wire	2
○ W8	SWKG0535SSA	Connector, with Wire	1
W10	SWKG1074SSA	Connector, with Wire	1
○ W11	SWKG1346ZA	Connector, with Wire	1
○ W12	SWKG1347ZA	Connector, with Wire	1
○ W13	SWKG04137LSA	Connector, with Wire	1
○ W14	SWKG06126ZA	Connector, with Wire	1
○ W15	SWKG06122SSB	Connector, with Wire	1
○ W16	SWKG079SSA	Connector, with Wire	1
○ W17	SWKG1081ZA	Connector, with Wire	1
○ W18	SWKG0523SSA	Connector, with Wire	1
○ W19	SWKG03111SSA	Connector, with Wire	1
○ W20	SWKG127SSA	Connector, with Wire	1
○ W21	SWKG1083LSA	Connector, with Wire	1
○ W22	SWKG03109ZB	Connector, with Wire	1
○ W23	SWKG04136LSA	Connector, with Wire	1
○ W24	SWKG03112ZA	Connector, with Wire	1
○ W25	SWKG1517STA	Connector, with Wire	1
○ W26	SWKG1515SSA	Connector, with Wire	1
○ W27	SWKG1082LSA	Connector, with Wire	1
○ W28	SWKG06125ZB	Connector, with Wire	1
○ W29	SWKG04138LSA	Connector, with Wire	1
W30	SWKG04115LTA	Connector, with Wire	1

REPLACEMENT PARTS LIST.....Cabinet and Chassis Parts

Notes:

1. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
2. ○ mark are new parts.
3. For part No. with area mark, check the area when placing an order.
4. Cabinet parts number of M and EW mark are indicate the deluxe cabinet.

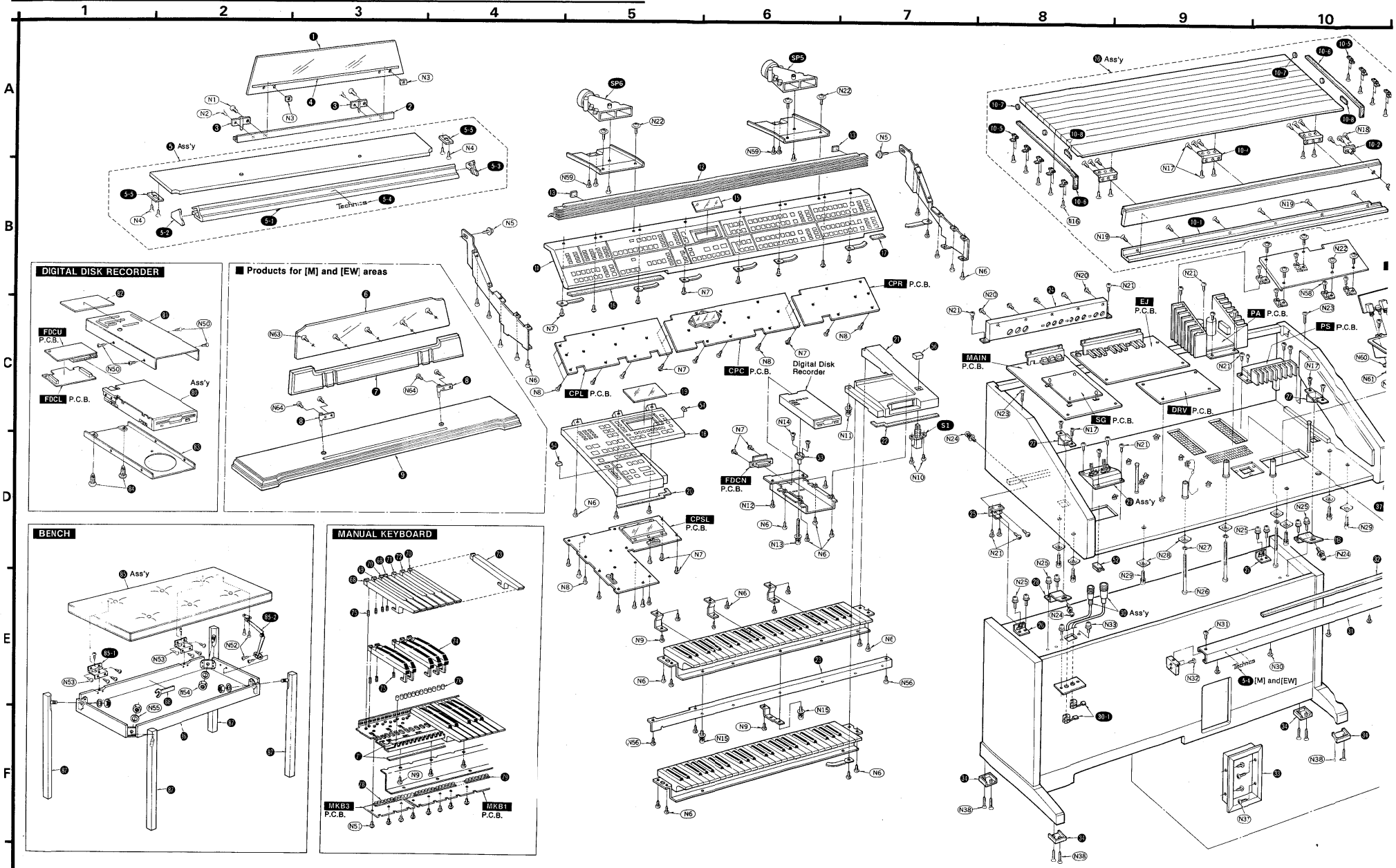
■CABINET PARTS

Ref. No.	Part No.	Description	Per/Set
POWER SWITCH			
S1 ⚠	ESB90712V	Power Switch	1
S1 M MC ⚠	ESB70277T	Power Switch	1
SPEAKER			
○ SP1	EAS30PL142B	30cm, 8Ω	1
○ SP2~4	EAS20PL255C	20cm, 8Ω	3
○ SP5, 6	EAS8HH62A	Horn Tweeter, 16Ω	2
POWER TRANSFORMER			
○ T1 ⚠	SLTG5S22	Power Transformer	1
○ T1 M MC ⚠	SLTG5S21	Power Transformer	1
POWER INDICATOR			
D1	LN29RP	LED, Power Indicator	1
POWER CORD, PLUG			
PC1 ⚠ M MC	SJAG22	Power Cord	1
PC1 ⚠ XL XR	SJAG23	Power Cord	1
PC1 ⚠ EK XS	SJAG25	Power Cord	1
PC1 ⚠	SJAG24	Power Cord European and Asia areas	1
PC2 X ⚠	SJP5213-1	Attachment Plug	1
CABINET & OTHERS			
○ 1	SKGG1B160A	Clear Panel, Music Rack	1
○ 2	SGXG2900A	Ornamert	1
3	SBLG230A	Stay	2
○ 4	SHRGA7200A	Felt	3
○ 5	SKPG980A	Top Cover Ass'y	1
○ 5-1	SGXG2840A	Ornament	1
○ 5-2	SHRG8350A	Cap, Left Side	1
○ 5-3	SHRG8360A	Cap, Right Side	1
5-4	SGBG150A	Technics Badge	1
5-5	SUWG1140A	Bracket	2
○ 6 M EW	SKGG1B180A	Clear Panel	1
○ 7 M EW	SKGG1E110A	Ornament	1
○ 8 M EW	SBLG250A	Stay	2
○ 9 M EW	SKPG1000A	Top Cover	1
○ 10	SKZG8450A	Sliding Cover Ass'y	1
○ 10 M EW	SKZG8490A	Sliding Cover Ass'y	1
○ 10-1	SGXG418A	Ornament	1
○ 10-1 M EW	SGXG3010A	Ornament	1
10-2	SBEG30A	Lock	1
10-3	SBEG40C	Staple	1
10-3 M EW	SBEG40A	Staple	1
10-4	SBHG6007-1	Hinge	3
○ 10-5	SHRG9930A	Catch, Guide Rail	10
○ 10-6	SHSG3500A	Felt	2
10-7	SHSG119	Felt	4
10-8	SHSG146-1	Felt	2
11	SBEG60A	Key	1
○ 12	SGXG2920A	Ornament	1
○ 13	SHSG3560A	Felt	2
○ 14	SGWG1900B	Upper Control Panel Ass'y	1
○ 15	SGUG30A	Display Cover Panel	1
○ 16	SHSG5810A	Felt	1
○ 17	SHSG5800A	Felt	1
○ 18	SGWG8210B	Lower Control Panel, Left	1
○ 19	SGUG40A	Display Cover Panel	1
○ 20	SHSG5770A	Felt	1
○ 21	SGWG8220B	Lower Control Panel, Right	1
○ 22	SHSG5780A	Felt	1
○ 23	SGXG2880A	Ornament, Keyboard	1
○ 24	SMKG3302A	Jack Panel	1
○ 25	SUWG3000A	Bracket	2
○ 26	SUWG3020A	Bracket	2
○ 27	SUWG3010A	Bracket	2
○ 28	SUWG3030A	Bracket	2
○ 29	SWKG1346ZA	Cable with Bracket	1
○ 30	SWKG1347ZA	Cable with Bracket	1
30-1	SHRG1160A	Bushing	2
○ 31	SGXG2860A	Front Panel	1
○ 31 M EW	SGXG2861A	Front Panel	1
32	SHSG3050A	Felt	1
33	SGXG1100K	Ornament, Expression	1
33 M EW	SGXG1100A	Ornament, Expression	1
34	SHRG2120C	Foot	4
○ 34 M EW	SHRG2250A	Foot	4
○ 35	SMKG1583A	Jack Panel	1
36	SHR401-1	Latch	2
37	SXVG3031B	Knee Lever Ass'y	1
37-1	SSLG1005A	Leaf Switch	1
37-2	SSHG1020A	Push Switch	1
○ 38	SKEG7640A	Guide Rail	1
○ 39	SKEG7650A	Guide Rail	1
○ 40	SKEG7660A	Guide Rail	1
○ 41	SKEG7670A	Guide Rail	1
○ 42	SHSG3571A	Felt	2
43	SHRG1110A	Cord Clamper	1
44	SHRG1120A	Cord Clamper	1
45	SHRG8130A	Speaker Cover	1
46	SHSG9140A	Sound Absorbing Material	3
47	SXVG6010B	Expression Pedal Ass'y	1
47-1	XAMR55P	Lamp	1
47-2	RJS205ZA	Lamp Socket	1
47-3	SHGG908	Lamp Holding Rubber	1
47-4	SSHG14	Foot Switch	2
○ 48 E	SKZG7780A	Rear Board (Upper), European areas	1
○ 48 EK X XL XR XS	SKZG7781A	Rear Board (Upper)	1
○ 48 M EW	SKZG7800A	Rear Board (Upper)	1
○ 49	SYUG1170A	Rear Board (Lower)	1
50	SHRG1030A	Cord Band	1
51	SHRG1070A	Cord Clamper	1
52	SHRG9620A	Cord Clamper	1
○ 53	SHRG9920A	Spacer	1
54	SBNG7031A	Knob	2
55	SBNG4010A	Mic Volume Knob	1
56	SBCG110B	Button, Power SW	1

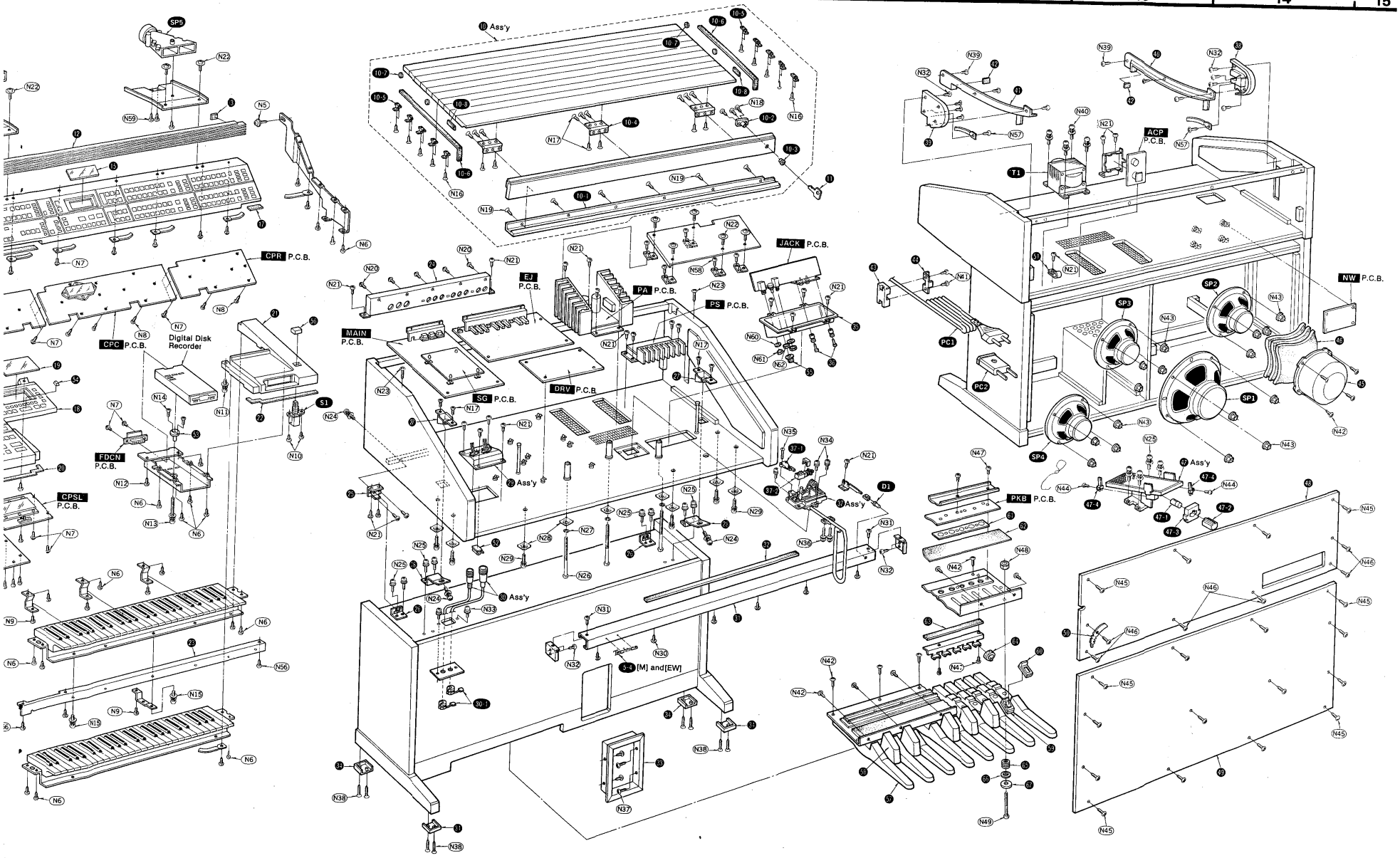
Ref. No.	Part No.	Description	Per/Set
PEDAL KEYBOARD			
57	STBG1163C	White Key (Gray)	8
57 M EW	STBG1163A	White Key (Brown)	8
58	STBG2052A	Black Key	5
59	STBG2310A	Full-Base Pedal	1
60	SGXG1390A	Ornament	1
61	SHGG50A	Rubber Switch (5 continuous)	3
62	SHSG4770A	Felt	1
63	SHSG1600B	Felt	1
64	SHSG1460A	Felt	14
65	SUSG180A	Spring	14
66	SHGG8130A	Rubber	14
67	SHRG9240A	Spacer	14
MANUAL KEYBOARD			
68	STBG1100A	White Key (C & F Keys)	2
69	STBG1110A	White Key (D Key)	8
70	STBG1120A	White Key (E & B Keys)	16
71	STBG1130A	White Key (G Key)	8
72	STBG1140A	White Key (A Key)	8
73	STBG1150A	White Key (Top Octave C Key)	2
74	STBG2070A	Black Key	40
75	SUSG270A	Spring	98
76	SHGG9050A	Key Guide Rubber	98
77	SHSG1930A	Felt	4
78	SSPG6001A	Rubber Switch (6 continuous)	14
79	SSPG7001A	Rubber Switch (7 continuous)	2
DIGITAL DISK RECORDER			
○ 80	SFDG20A	Digital Disk Recorder Ass'y	1
○ 81	SUVG1190A	Cover	1
○ 82	SHRGA5580A	Insulator	1
○ 83	SUVG1180A	Cover	1
84	SHRG9490A	P.C.B. Holder	2
BENCH (Except [M] and [EW] areas)			
○ 85	SKZGD820A	Top Cover	1
85-1	SBHG50D	Hinge	2
85-2	SBLG70A	Stay	1
○ 86	SKZGC860B	Box	1
87	SKZGC471B	Leg	4
88	SBEG190A	Spanner	1
BENCH (Products for [M] and [EW] areas)			
85 M EW	SKZGD050A	Top Cover Ass'y	1
85-1 M EW	SBHG50B	Hinge	2
85-2 M EW	SBLG70A	Stay	1
86 M EW	SKZGD060A	Box	1
87 M EW	SKZGD070A	Leg	4
88 M EW	SBEG190A	Spanner	1
SCREWS & WASHERS			
N1	XSB4+8FZ	Screw	2
N2	XTB3+8JFZ	Screw	2
N3	SNEG260B	Nut	2
N4	XTS35+20A	Screw	4
○ N5	SNEG2400A	Screw with Washer	2
N6	XTB4+12A	Screw	28
N7	XTW3+10QFVC	Screw	18
N8	XTV3+10G	Screw	40
N9	XTB3+5C	Screw	12
N10	SNEG740A	Screw	2
N11	XYN4+F10	Screw with Washer	1
N12	XTB4+8B	Screw	2
N13	XYN4+F40	Screw with Washer	1
N14	XTS3+6B	Screw	2
N15	XYN5+C10	Screw with Washer	2
N16	XTS4+12A	Screw	20
N17	XTS35+12A	Screw	19
N18	XTB3+10A	Screw	3
N19	XTS3+10AFVC	Screw	6
N19 M	XTB3+10AFZ	Screw	6
○ N20	XTW3+10JFVC	Screw	5
N21	XTB35+12A	Screw	30
○ N22	XTWSG2	Screw	9
N23	XTT4+30A	Screw	2
○ N24	SNEG2270A	Screw with Washer	4
N25	XYN4+F20FZ	Screw with Washer	12
N26	SNEG1380B	Screw	3
N27	XWA5BFZ	Washer	3
N28	SNEG150B	Washer	9
N29	XYN5+C30FZ	Screw with Washer	6
N30	XTT35+10AFVC	Screw	6
N31	XTB3+8BFVC	Screw	2
N32	XTB35+20A	Screw	12
N33	XYN3+F20FZ	Screw with Washer	2
N34	XYN3+C12	Screw with Washer	3
N35	XTN2+10FFX	Screw	1
N36	XYN3+F16FZ	Screw with Washer	2
N37	XTB3+14AFZ	Screw	4
N37 M	XTB3+14AFVC	Screw	4
N38	XTB35+25A	Screw	8
N39	XTT4+16A	Screw	6
N40	XYN4+F20	Screw with Washer	4
N41	XTB35+30A	Screw	2
N42	XTT4+14A	Screw	13
N43	SNE499-1	Nut	16
N44	XTN26+6B	Screw	2
N45	XTT4+30AFVC	Screw	18
N46	XTT4+16AFVC	Screw	6
N47	XTB3+6B	Screw	11
N48	XNG5BS	Nut	14
N49	SNEG360A	Screw	14
N50	XSS3+6FZ	Screw	4
N51	XTW3+10T	Screw	13
N52	XTS3+14A	Screw	4
N53	XTB35+14AFZ	Screw	10
N54	XNH10G	Nut	4
N55	XWB10B	Washer	4
N56	XTT4+10A	Screw	3
N57	XTV3+10G	Screw	2
N58	XTV3+10C	Screw	5
N59	XTB4+8A	Screw	6
N60	SNEG770A	Washer	2
N61	XNS12FZ	Nut	2
N62	SNE4021-1	Nut	1
N63	XTT4+14AFVC	Screw	5
N64	XTB3+14AFVC	Screw	4

EXPLODED VIEWS OF CABINET

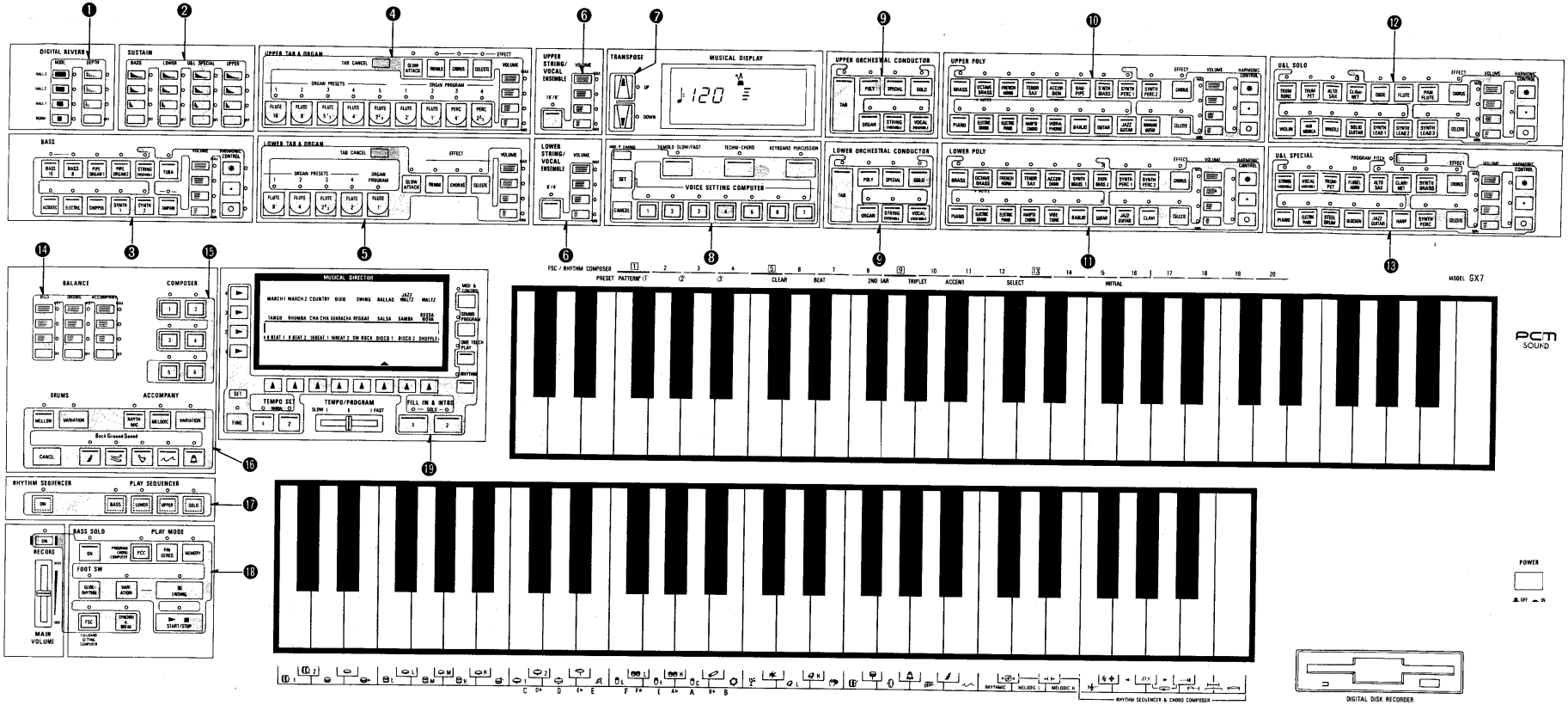
Note: The cabinet assembly parts will not be supplied as repair parts.



Note: The cabinet assembly parts will not be supplied as repair parts.



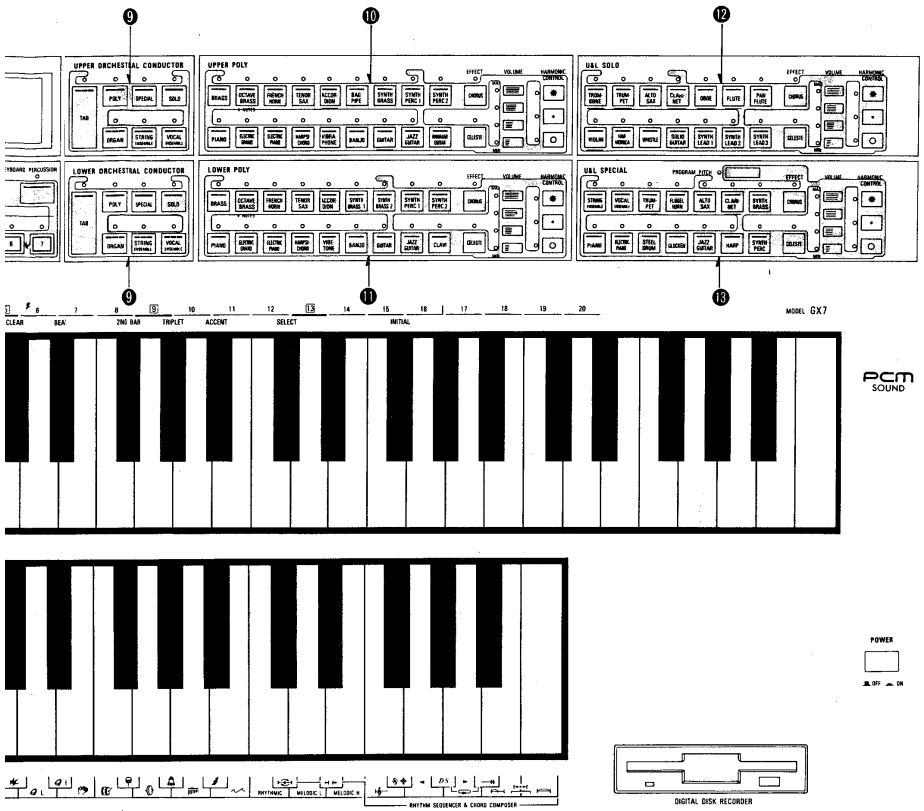
■ BUTTON



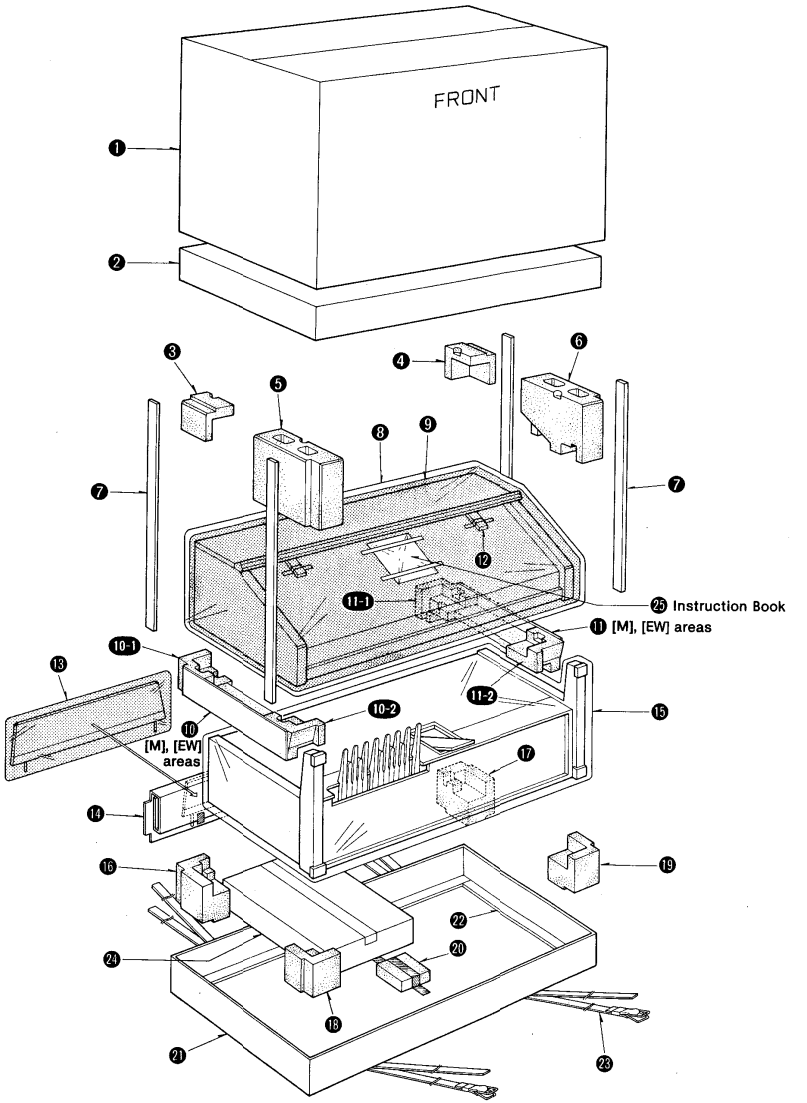
■ BUTTON

Ref. No.	Part No.	Description	Per/Set
1	SBCG410A	Button, Digital Reverb	1
2	SBCG420A	Button, Sustain	1
3	SBCG430A	Button, Bass	1
4	SBCG440A	Button, Upper Tab & Organ	1
5	SBCG450A	Button, Lower Tab & Organ	1
6	SBCG460A	Button, String/Vocal Ensemble	2
7	SBCG470A	Button, Transpose	1
8	SBCG480A	Button, Voice Setting Computer	1
9	SBCG490A	Button, Orchestral Conductor	2
10	SBCG500A	Button, Upper Poly	1
11	SBCG510A	Button, Lower Poly	1

Ref. No.	Part No.	Description	Per/Set
12	SBCG520A	Button, U & L Solo	1
13	SBCG530A	Button, U & L Special	1
14	SBCG540A	Button, Balance	1
15	SBCG550A	Button, Composer	1
16	SBCG560A	Button, Drums, Accompany, BGS	1
17	SBCG570A	Button, Rhythm Sequencer, Play Sequencer	1
18	SBCG580A	Button, Record, Play Mode, etc.	1
19	SBCG590A	Button, Musical Director, etc.	1


UPPER ORCHESTRAL CONDUCTOR
UPPER POLY
UBL SOLO
LOWER ORCHESTRAL CONDUCTOR
LOWER POLY
UBL SPECIAL
MODEL GX7
CLEAR
BEAT
2NB BAR
TRIPLET
ACCENT
SELECT
INITIAL
PCM SOUND
POWER
RHYTHM SEQUENCER & CHORD COMPOSER
DIGITAL DISK RECORDER

PACKING


FRONT
25 Instruction Book
11 [M], [EW] areas
[M], [EW] areas

■ PACKING PARTS (Except [M] and [EW] areas)

Ref. No.	Part No.	Description	Per/Set
○ 1	SPNG1991A	Carton Box	1
○ 2	SPNG1994A	Top Case	1
○ 3	SPNG5747A	Pad	1
○ 4	SPNG5748A	Pad	1
○ 5	SPNG5745A	Pad	1
○ 6	SPNG5746A	Pad	1
○ 7	SPNG3109A	Prop	4
8	SPHG220A	Polyethylene Bag	1
9	SPHG620A	Protection Sheet	1
○ 10-1	SPNG5743A	Pad	1
○ 10-2	SPNG5741A	Pad	1
○ 11-1	SPNG5744A	Pad	1
○ 11-2	SPNG5742A	Pad	1
12	SPNG5161A	Spacer	2
○ 13	SPHG2020A	Protection Sheet	1
○ 14	SPNG1996A	Sleeve, Music Rack	1
15	SPHG770A	Polyethylene Bag	1
○ 16	SPNG5739A	Pad	1
○ 17	SPNG5740A	Pad	1
○ 18	SPNG5737A	Pad	1
○ 19	SPNG5738A	Pad	1
○ 20	SPNG5749A	Pad	1
○ 21	SPNG1995A	Bottom Case	1
○ 22	SPNG3108A	Frame	1
23	SPSG40A	Band	4
○ 24	SPEG1165A	Packing Case, Bench	1
INSTRUCTION BOOK			
○ 25	SQFGA840	Instruction Book, [EN] area	1
○ 25	SQFGA890	Instruction Book, [MC], [EK], [EP], [X], [XL], [XR], [XS] areas	1
○ 25	SQFGA1060	Instruction Book, [EZ], [EW], [EI], [EB], [EF], [EH] areas	1
○ 25	SQFGA930	Instruction Book, [PA] area	1

■ PACKING PARTS (M and EW areas)

Ref. No.	Part No.	Description	Per/Set
○ 1	SPNG2016A	Carton Box	1
○ 2	SPNG2020A	Top Case	1
○ 3	SPNG5747A	Pad	1
○ 4	SPNG5748A	Pad	1
○ 5	SPNG5767A	Pad	1
○ 6	SPNG5768A	Pad	1
○ 7	SPNG3112A	Prop	4
8	SPHG220A	Polyethylene Bag	1
9	SPHG620A	Protection Sheet	1
○ 10	SPNG5771A	Pad Ass'y	1
○ 11	SPNG5772A	Pad Ass'y	1
12	SPNG5161A	Spacer	2
○ 13	SPHG2020A	Protection Sheet	1
○ 14	SPNG2024A	Sleeve, Music Rack	1
15	SPHG770A	Polyethylene Bag	1
○ 16	SPNG5777A	Pad	1
○ 17	SPNG5778A	Pad	1
○ 18	SPNG5775A	Pad	1
○ 19	SPNG5776A	Pad	1
○ 20	SPNG5783A	Pad	1
○ 21	SPNG2022A	Bottom Case	1
○ 22	SPNG3110A	Frame	1
23	SPSG40A	Band	4
24	SPEG1134A	Packing Case, Bench	1
INSTRUCTION BOOK			
○ 25 M	SQFGA880	Instruction Book	1
○ 25 EW	SQFGA1060	Instruction Book	1